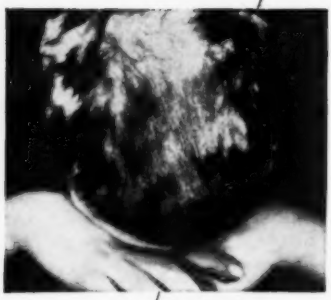
Medical TIMES

more effective against

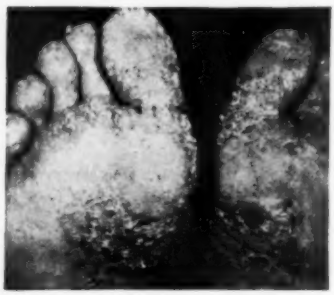


tinea capitis

"More effective in ringworm of the scalp than any other topical agent."[1]

tinea pedis

In "athlete's foot" a combined cured and improved rate of 95% has been obtained.[1]



Also indicated in

tinea corporis
tinea cruris
tinea versicolor
tinea of the nails

"broad antifungal spectrum ...good cutaneous tolerance."[1]

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Asterol® *dihydrochloride*

5% tincture . . . ointment . . . powder . . . sprayed, applied with cotton or dusted on

'Roche'

1. Stritzler, C.; Fishman, I. M., and Laurens, S.: *Transactions New York Acad. Sc., 13*:31, Nov., 1950.

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For

Bacterial Diarrhea

STREPTOMAGMA*

Dihydrostreptomycin Sulfate and Pectin with Kaolin in Alumina Gel

Combines

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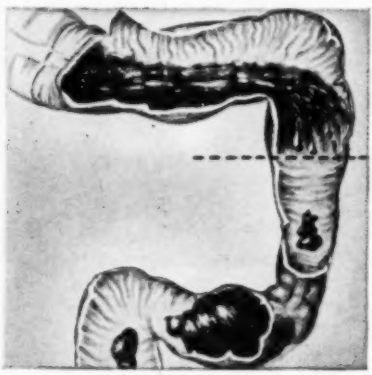
Oral streptomycin, effective against most organisms implicated in bacterial diarrhea. More rapid in action than sulfonamides. Non-toxic in therapeutically effective dosage.



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1. Bring symptomatic relief by soothing and coating inflammed and irritated mucosa.
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Four teaspoonfuls, three or four times daily before meals. Children, according to weight and response.

Supplied: Bottles of 3 fl. oz.

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CONTENTS

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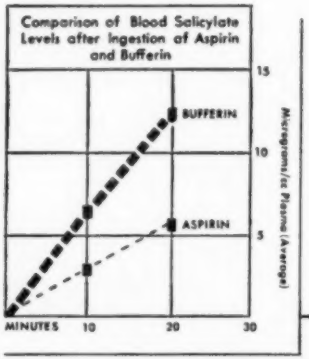
Faster Pain Relief with BUFFERIN

1 ACTS TWICE AS FAST AS ASPIRIN

The antacids in Bufferin speed its pain-relieving ingredients through the stomach and into the blood stream. Actual chemical determinations show that within ten minutes after Bufferin is ingested blood salicylate levels are higher than those attained by aspirin in twice this time.[1]



2 DOES NOT UPSET THE STOMACH

Bufferin's antacid ingredients protect the stomach against aspirin irritation. This has been clinically demonstrated on hundreds of patients.

in usual doses

In a series of 238 cases, 22 had a history of gastric distress due to aspirin but only one reported any distress after taking 2 Bufferin tablets (equivalent to 10 grains of aspirin).[1]

in large doses

In a recent study group, 1006 patients received, over a 24 hour period, 12 Bufferin tablets (equivalent to 60 grains of aspirin). Although 72 had a history of being sensitive to aspirin, only 18 reported any gastric side-effect with Bufferin.[2]

1. Effect of Buffering Agents on Absorption of Acetylsalicylic Acid. J. Am. Pharm. Assoc., Sc. Ed. 39:21. Jan. 1950
2. Gastric Tolerance for Aspirin and Buffered Aspirin. Ind. Med. 20:480. Oct. 1951

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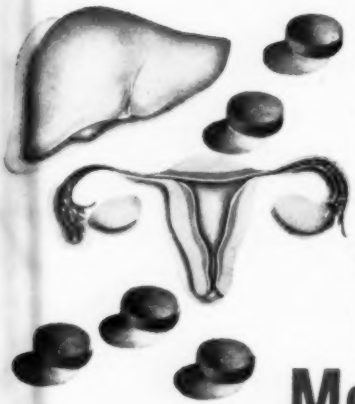
EACH BUFFERIN TABLET contains 5 grains of acetylsalicylic acid, together with optimum amounts of the antacids aluminum glycinate and magnesium carbonate.

AVAILABLE in vials of 12 and 36 tablets and in bottles of 100. Tablets scored for divided dosage.

CONTENTS

the modern concept in menopausal therapy...



The *menopausal lipotropic,* MENOTROPE corrects the *interrelated* lipid and estrogenic imbalances of the menopause by providing a selected group of *interrelated* lipotropic agents esssential to liver function and the utilization of estrogens.

The liver is important in both lipid and estrogen metabolism. Estrogen levels influence lipid metabolism and liver function. Therapy with MENOTROPE is therefore directed against a common physiologic denominator of the disorders often seen in menopausal patients.

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Menotrope tablets

menopausal lipotropic

relief through lipotropic-estrogen control

formula: Each tablet of MENOTROPE contains Choline Bitartrate 80.00 mg.; Estrotate (estradiol-3-trimethylacetate) 0.33 mg.; Folic Acid 0.46 mg.; Vitamin B_{12} U.S.P. 1.25 mcg.

dosage: One to three tablets daily.

packaging: Bottles of 100 tablets.

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And 3 live births from 3 women with histories of 3 abortions—100%—concluding that **des** is the "drug of choice" in these complications of pregnancy.

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REFERENCES:

1. Gitman, L., and Kaplowitz A.: Use of diethylstilbestrol in complications of pregnancy. New York State J. Med. 50:2823: 1950.
2. Ross, J.S.: Use of diethylstilbestrol in the treatment of threatened abortion. N. Nat. M.A. 43:20, 1951.
3. Karnaky, K.J.: Am. J. Obsts. & Gynec. 58,622. 1949.

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*Talkov, R. H., Ropes, M. W., and Bauer, W.: *The Value of Enteric Coated Aspirin*, N.E.J. Med. 242,19 (Jan. 5) 1950.

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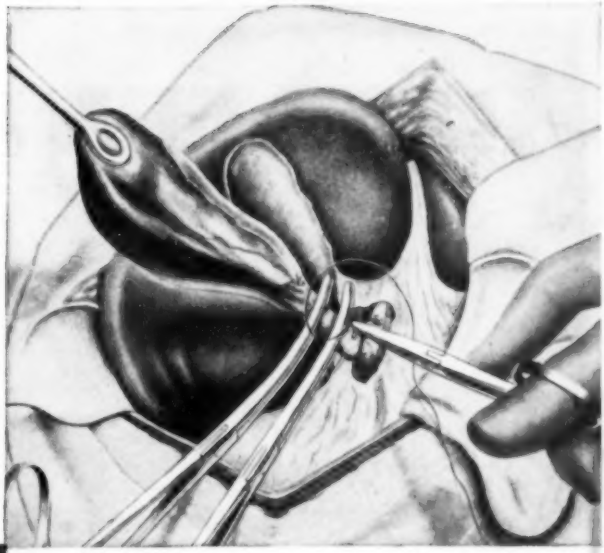

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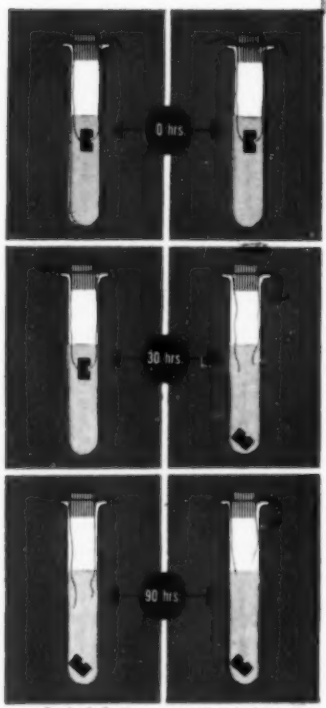

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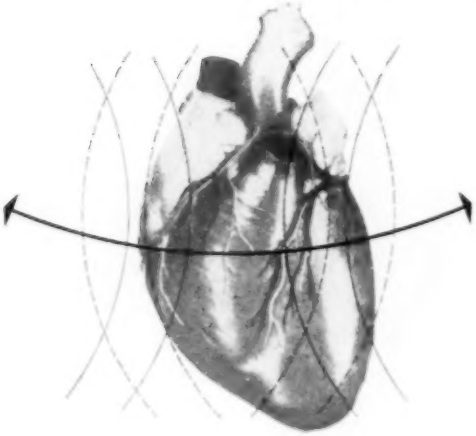

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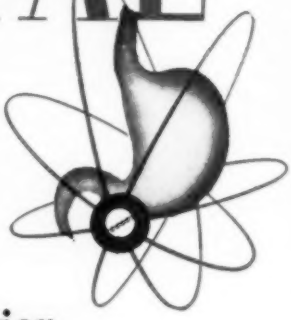

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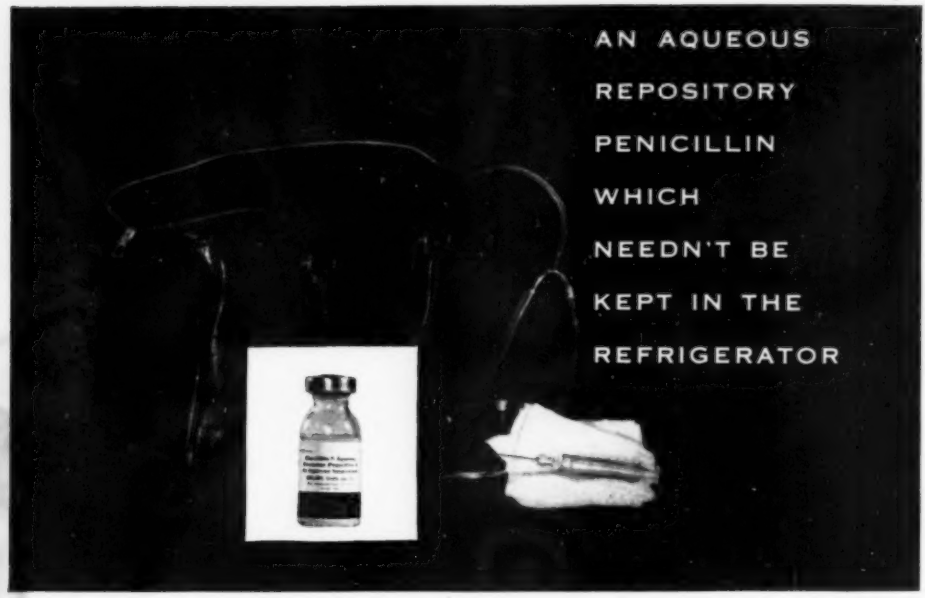

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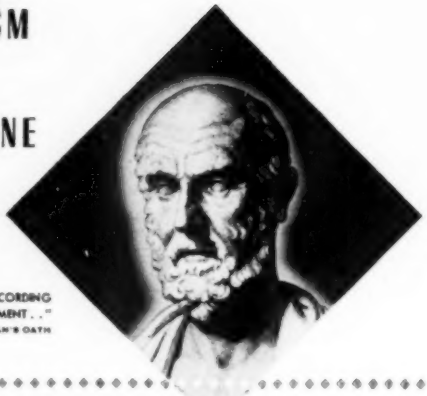

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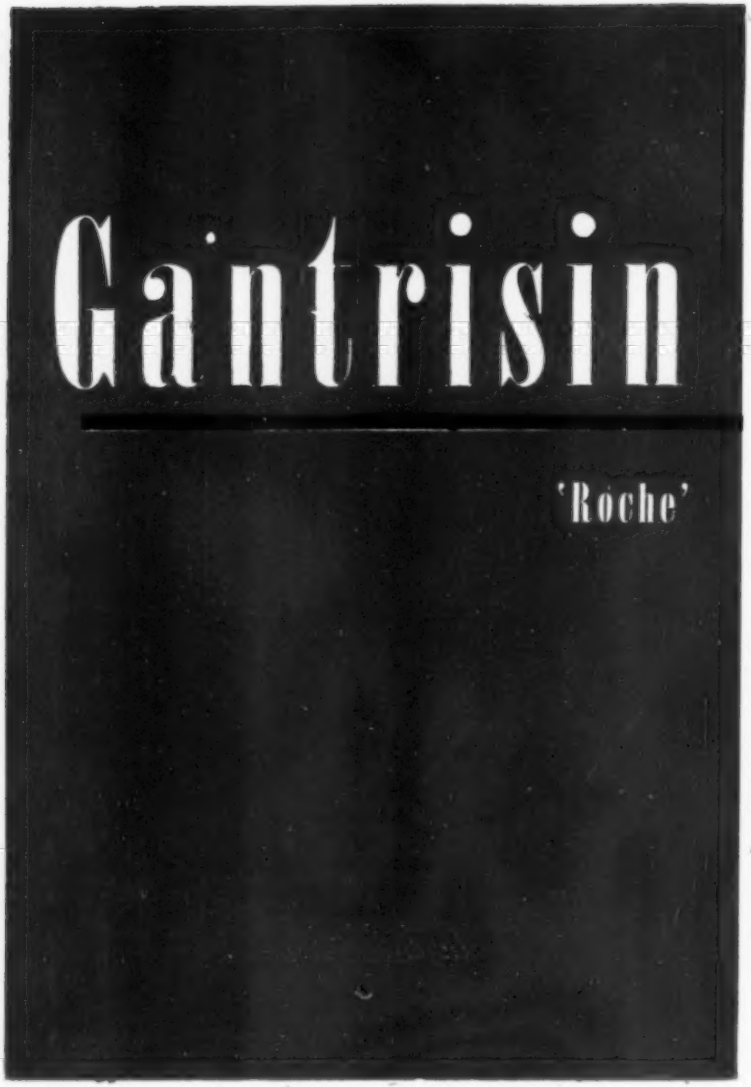
PHARMACEUTICAL DIVISION, HOMEMAKERS' PRODUCTS CORPORATION, NEW YORK 10


Gantrisin
'Roche'

antibacterial action plus...

■ **greater solubility**

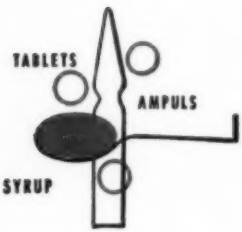
Gantrisin is a sulfonamide so soluble that there is no danger of renal blocking and no need for alkalinization.

■ **higher blood level**

Gantrisin not only produces a higher blood level but also provides a wider antibacterial spectrum.

■ **economy**

Gantrisin is far more economical than antibiotics and triple sulfonamides.



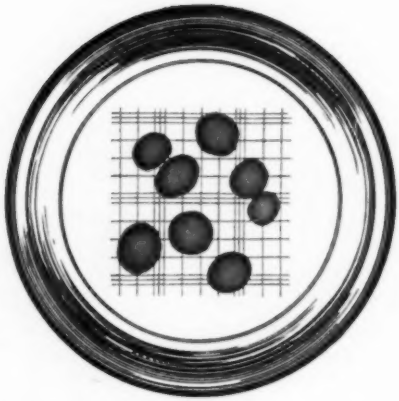
■ **less sensitization**

Gantrisin is a single drug—not a mixture of several sulfonamides—so that there is less likelihood of sensitization.

GANTRISIN®—brand of sulfisoxazole
(3,4-dimethyl-5-sulfanilamido-isoxazole)

HOFFMANN-LA ROCHE INC.

Roche Park • Nutley 10 • New Jersey



more than specific therapy...

may be needed to accelerate recovery in the common anemias.

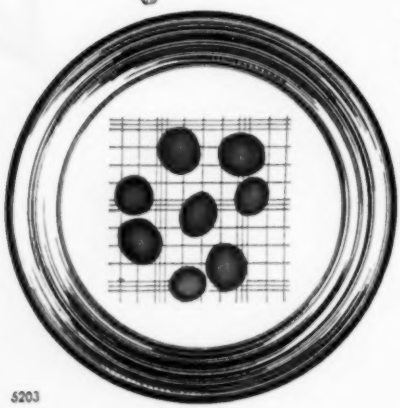
In treating microcytic hypochromic anemia, particularly in the patient of reproductive age or when blood loss of any type is a conditioning factor, you will want to prescribe **not only iron but also all the elements known to be essential for the development and maturation of red blood cells.** "Bemotinic" provides all these factors.

Each capsule contains:		
Ferrous sulfate exsic. (3 gr.)	200.0	mg.
Vitamin B_{12} U.S.P. (crystalline)	10.0	mcg.
Gastric mucosa (dried)	100.0	mg.
Desiccated liver substance, N.F.	100.0	mg.
Folic acid	0.67	mg.
Thiamine HCl (B_1)	10.0	mg.
Vitamin C (ascorbic acid)	50.0	mg.

In macrocytic hyperchromic anemias, the elements contained in "Bemotinic" will provide additional support to specific therapy, or may be used for maintenance once remission has been achieved. In many pernicious anemia patients there is need for iron because of a co-existent iron deficiency.

Suggested Dosage: One or two capsules (preferably taken after meals) three times daily, or as indicated.

No. 340—Supplied in bottles of 100 and 1,000



"Bemotinic"

CAPSULES

for just the right shade of red

Ayerst, McKenna & Harrison Limited
New York, N.Y. • Montreal, Canada

5203

Edrisal: "an entirely adequate substitute for ordinary doses of codeine..."

(Am. J. Obst. & Gynec. *61*:1366, 1951)

but Edrisal contains no narcotics!

Each 'Edrisal' *dose* (2 tablets) contains:	
'Benzedrine' Sulfate (racemic amphetamine sulfate, S.K.F.)	5 mg.
Acetylsalicylic acid	5 gr.
Phenacetin	5 gr.

please note: The color of the 'Edrisal' tablet is being changed from white to blue-green.

Edrisal relieves pain and the depression that magnifies pain

Smith, Kline & French Laboratories | *Philadelphia*

'Edrisal' & 'Benzedrine' T.M. Reg. U.S. Pat. Off.

In a matter of minutes...

GRATIFYING RELIEF

From distressing

Urogenital Symptoms

In a matter of minutes, the local analgesic action of PYRIDIUM safely allays burning, dysuria, urgency, and frequency which often accompany cystitis, prostatitis, urethritis, and pyelonephritis.

PYRIDIUM is compatible with crystalline dihydrostreptomycin sulfate, penicillin, the sulfonamides, or other specific therapy, and is frequently administered together with one of these agents to provide the dual approach of symptomatic relief and corrective action.

PYRIDIUM®

(Brand of Phenylazo-diamino-pyridine HCl)

PYRIDIUM is the registered trade-mark of Nepera Chemical Co., Inc. for its brand of phenylazo-diamino-pyridine HCl. Merck & Co., Inc. sole distributor in the United States.

MERCK & CO., INC.

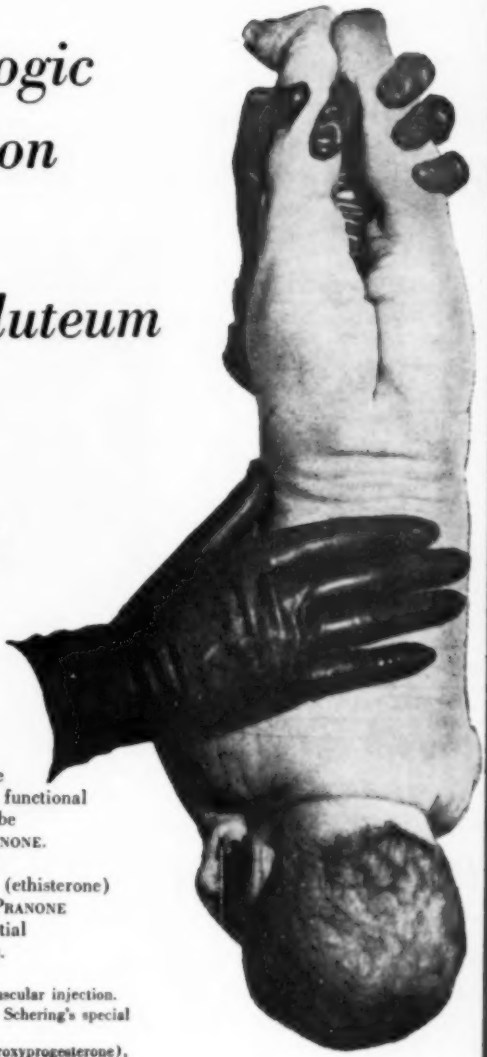
Manufacturing Chemists

RAHWAY, NEW JERSEY

In Canada: MERCK & CO. Limited - Montreal

physiologic correction for corpus luteum failure

PROLUTON
PRANONE



PROLUTON PRANONE

Whether a deficiency of corpus luteum hormone presents as spontaneous abortion, metrorrhagia, functional dysmenorrhea, or premenstrual tension, it may be corrected *physiologically* by PROLUTON and PRANONE. PROLUTON (pure progesterone) is administered intramuscularly or as Buccal Tablets. PRANONE (ethisterone) is administered as tablets. Both PROLUTON and PRANONE aid development of a normal endometrium essential for uninterrupted pregnancy and normal menses.

PROLUTON ® (Progesterone U.S.P.) in oil for intramuscular injection.

PROLUTON Buccal Tablets (Progesterone U.S.P.) in Schering's special solid solvent base, POLYHYDROL.®

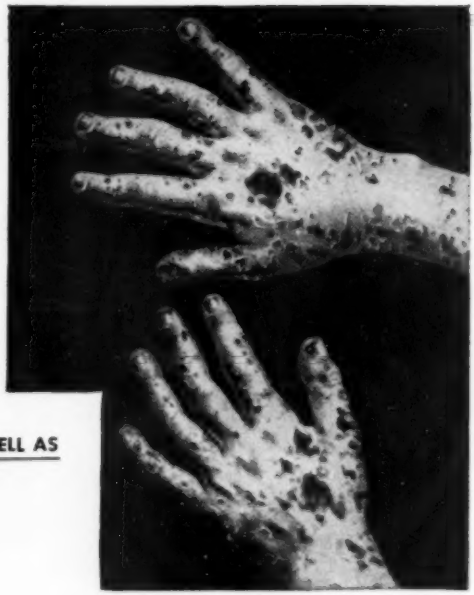
PRANONE ® Tablets (Ethisterone U.S.P.; anhydrohydroxyprogesterone), orally effective progestin.

Schering CORPORATION · BLOOMFIELD, N. J.

Doubly Effective in Pruritic Skin Disorders

- **AS AN ANTIHISTAMINE:**
  "Phenergan compared dose for dose with other available antihistaminic drugs proved to be the most efficacious and the longest-acting drug."[1]

- **AS A LOCAL ANESTHETIC**
  Phenergan applied topically has been shown to be significantly more potent than other antihistamines,[2,3] cocaine,[4] or procaine.[2]



INDICATED IN NONSPECIFIC AS WELL AS ALLERGIC PRURITUS

CREAM

PHENERGAN®

Hydrochloride
Promethazine Hydrochloride

Applications are practically invisible because the cream quickly disappears when gently rubbed on the skin.

SUPPLIED:
Collapsible tubes of 1.12 oz.

PHENERGAN®

LOTION WITH NEOCALAMINE

Promethazine Lotion with Neocalamine

When drying, astringent action is desired.

Blends with skin tones.

SUPPLIED:
Bottles of 4 fl. oz.

1. Peshkin, M.M. et al.: Ann. Allergy 9:727, 1951.
2. Landau, S.M. et al.: J. Allergy 22:19, 1951.
3. Code, C.F. et al.: Bull. New York Acad. Sc. 50:1177, 1950.
4. Halpern, B.N. et al.: Compt. rend. Soc. biol. 141:1125, 1947.

Wyeth®

Wyeth Incorporated, Philadelphia 2, Pa.

from the literature --

reports on the new contraceptive gel used without a diaphragm

clinical report 634 patients

"A study was undertaken of 634 women who used a new type contraceptive gel-alone having improved spermicidal characteristics. Careful follow-up was made of the entire series. In all, 14 failures occurred in 4046 woman-months exposure, giving a pregnancy rate of 4. This figure is substantially less than pregnancy rates reported from other series using jelly-alone, suppositories, and diaphragm-jelly combinations.

* * * * *

"It is easy to instruct the patient in the use of PRECEPTIN [vaginal gel], and because of this simplicity of use, more regularity and better results can be expected.

conclusions

"There were 5 pregnancies in the series of women using PRECEPTIN [vaginal gel], six months or more, an effectiveness of 97.9 per cent."†

clinical survey summary of reports from 51 urban and rural areas

Analysis of clinical histories of 3270 patients who used PRECEPTIN vaginal gel under the direction of their physicians showed only 25 pregnancies — 99.2 per cent received complete protection. Incidence of irritation was only 0.6 per cent.

It is clear that PRECEPTIN vaginal gel's combination of simplicity and dependability makes for extremely high contraceptive effectiveness.

for simple, effective contraception without a diaphragm

PRECEPTIN vaginal gel—a major advance in conception control developed by Ortho Research Laboratories.

Composition: PRECEPTIN vaginal gel contains the active spermicidal agents p-Diisobutylphenoxypolyethoxyethanol and ricinoleic acid in a synthetic base buffered at pH 4.5.

†Stromme, W. B., and Rothnem, M. S.: Clinical Experience with a New Gel-Alone Method of Contraception. World Population Problems and Birth Control; Annals New York Academy of Sciences, Vol. 54, Art. 5, in press.

Preceptin® VAGINAL GEL

applied with measured-dose applicator

Ortho Pharmaceutical Corporation Raritan, New Jersey

Manufacturers of Ortho-Gynol® vaginal jelly, Ortho® Creme, Ortho® Kit, and Ortho® White Kit.

ortho

1 out of 2 suffer **nausea** and **vomiting**[1]....

Nidoxital®

Capsules

for more comfortable pregnancy

NIDOXITAL Capsules control nausea and vomiting of pregnancy within hours in 96 per cent of patients.[2] Because early control is important both for the comfort of the patient and for the prevention of hyperemesis gravidarum, NIDOXITAL therapy should be instituted at the first sign of gastric discomfort.

NIDOXITAL Capsules simultaneously combat causative factors—local, central, metabolic—of nausea and vomiting with 5 agents:

pyridoxine	specifically relieves a large percentage of patients; improves protein metabolism; maintains nerve function.
pentobarbital sodium	selectively raises the threshold of the vomiting center; reduces central excitability.
benzocaine	exerts local anesthetic action on the gastric mucosa.
dl-methionine	protects liver function; helps detoxify metabolites.
nicotinamide	modifies excessive peristalsis.

dosage:

One capsule 30-45 minutes before each meal. For the interest of economy, original prescriptions should ordinarily specify 12 capsules, since this quantity is often sufficient for complete control.

NIDOXITAL is available in bottles of 24 and 100 capsules, each capsule containing pyridoxine hydrochloride 50 mg.; dl-methionine 100 mg.; nicotinamide 25 mg.; benzocaine 100 mg.; and pentobarbital sodium 15 mg.

1. DeLee, J. B., and Greenhill, J. P.: Principles and Practices of Obstetrics, ed. 9, Philadelphia, Saunders, 1947, p. 319.
2. Hurbutt, F. R.: Am. J. Obst. & Gynec. 59:458, 1950.

Ortho Pharmaceutical Corporation • Raritan, N. J.

in functional G.I. *distress*

though findings are negative, patients remain positive of their many symptoms – belching, flatulence, nausea, indigestion and constipation.

prompt and effective relief

can be given most of these patients by prescribing *Decholin/Belladonna* for alleviating spasm and stimulating liver function.

DECHOLIN® with BELLADONNA

reliable spasmolysis

The belladonna component of *Decholin/Belladonna* effectively relieves pain due to spasm and incoordinate peristalsis, and facilitates biliary and pancreatic drainage through relaxation of the sphincter of Oddi.

improved liver function

Dehydrocholic acid *(Decholin)*, the most powerful *hydro*choleretic known, increases bile flow, flushes the biliary tract with thin fluid bile and provides mild laxation without catharsis.

DOSAGE

One or, if necessary, two *Decholin/Belladonna* Tablets three times daily.

COMPOSITION

Each tablet of *Decholin/Belladonna* contains *Decholin* (brand of dehydrocholic acid) 3¾ gr., and ext. of belladonna, 1/6 gr. (equivalent to tincture of belladonna, 7 minims). Bottles of 100.

DB-1

AMES COMPANY, INC • ELKHART, INDIANA

Ames Company of Canada, Ltd., Toronto

Isatin – the new laxative principle

In 1950, a Harrower research team isolated and identified a diphenyl isatin as the principal laxative component of prunes. A synthetic analogue of the isatin identified in prunes was then evaluated physiologically and pharmacologically. Like nature's Isatin, it was found to supplement the colloidal and emollient effects of prunes by gently stimulating peristalsis, and did so without any undesirable side effects.

now

PRULOSE COMPLEX LIQUID

–the new liquid form of ISATIN-activated moist bulk–combines ISATIN with a prune concentrate and sodium carboxymethylcellulose, for the safe treatment of functional constipation.

PRULOSE COMPLEX Liquid is the flavorful and extremely palatable constipation corrective for all patients, from pediatric to geriatric.

PRULOSE COMPLEX Liquid is available in 12 oz. bottles.

DOSAGE: 1 or 2 tablespoonfuls with a full glass of water, twice daily, preferably after breakfast and before retiring, until normal elimination is established. The dosage may then be reduced. *Note:* A high fluid intake should be maintained throughout the day.

the Harrower Laboratory inc. · 930 newark avenue · jersey city 6, n. j.

261-66-22

as an antihistaminic agent

Pyribenzamine® is *unsurpassed*

in hay fever . . .

in allergic rhinitis

in urticaria

in serum sickness

in angioneurotic edema

in drug reaction

for **maximum relief**

with **minimal side effects**

Pyribenzamine (brand of tripelennamine) hydrochloride

Ciba Summit, N. J. 2/1728M

ACTHAR* *Gel*

IN DISPOSABLE CARTRIDGE SYRINGE

TO FACILITATE HOME AND OFFICE TREATMENT

RAPID RESPONSE
PROLONGED ACTION

Specific Indications: DRUG SENSITIVITY REACTIONS following the administration of penicillin, other antibiotics, sulfonamides, etc., are specific, practical indications for the use of Long-Acting ACTHAR *Gel* in Disposable Cartridge Syringes. In these cases, the patient demands immediate and prolonged relief from the intense symptoms. ACTHAR *Gel* Long-Acting is definitely superior to conventional methods in terms of more rapid relief over greater periods of time with virtually no therapeutic failures. Low total dosage, with few injections, is required.

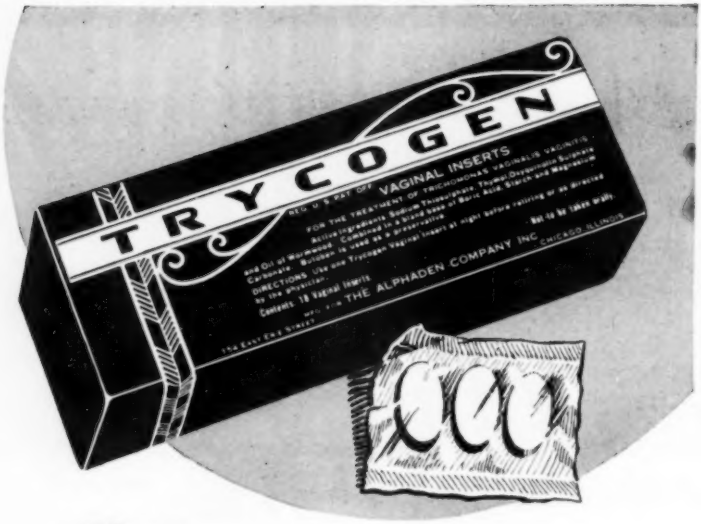
Supplied in a sterile 1 cc. B-D cartridge with B-D disposable cartridge syringe† in potencies of 20 I.U. per cc. and 40 I.U. per cc.

†T. M. Reg. Becton, Dickinson & Co.

*THE ARMOUR LABORATORIES BRAND OF ADRENOCORTICOTROPIC HORMONE (A.C.T.H.)

THE ARMOUR LABORATORIES
CHICAGO 11, ILLINOIS
-world-wide dependability-

PHYSIOLOGIC THERAPEUTICS THROUGH BIORESEARCH



The "DRY TREATMENT" OF VAGINITIS

Comforting to the patient, simple and clean to administer, is the "dry treatment" of vaginal leukorrhea, using—

1. **TRYCOGEN POWDER** insufflation in the office; (optional)
2. **TRYCOGEN INSERTS** for home treatment

In trichomonal, monilia, or senile vaginitis, TRYCOGEN acts to destroy the parasitic invaders, relieve the pruritus, and restore the normal vaginal flora.

TRYCOGEN presents sodium thiosulfate, thymol, oxyquinoline sulfate and oil of wormwood in a base of boric acid and starch. Non-irritating; non-staining.

Trycogen Inserts, Boxes of 18 and 100 • Trycogen Powder, 25-gram vials. Also in 8-oz. and 16-oz. containers.

THE ALPHADEN COMPANY

CHICAGO, ILLINOIS

7½ gr.

7½ gr. (0.5 Gm.) *BLUE* CAPSULES CHLORAL HYDRATE – *Fellows*

• DESIRABLE SLEEP

lasting from five to eight hours, usually free from undesirable after-effects. Pulse and respiration are slowed in the same manner as in normal sleep. Reflexes are not abolished and the patient can be readily aroused.[2] "CHLORAL HYDRATE produces a normal type of sleep, and is rarely followed by 'hangover'."[1]

Dosage: One to two 7½ gr., or two to four 3¾ gr. capsules at bedtime.

CAPSULES CHLORAL HYDRATE – *Fellows*

ODORLESS • NON-BARBITURATE • TASTELESS

3¾ gr. (0.25 Gm.) *BLUE and WHITE* CAPSULES CHLORAL HYDRATE—*Fellows*

• DAYTIME SEDATION

for the patient who needs daytime sedation and relaxation with complete comfort.

Dosage: One 3¾ gr. capsule three times a day, after meals.

3¾ gr.

EXCRETION — Rapid and complete, therefore no depressant after-effects.[3, 4]

Available: Capsules CHLORAL HYDRATE — Fellows
3¾ gr. (0.25 Gm.) Blue and white capsules . . . bottles of 24's and 100's
7½ gr. (0.5 Gm.) Blue capsules . . . . . bottles of 50's

Professional samples and literature on request

Fellows MEDICAL MFG. CO., INC. Pharmaceuticals

pharmaceuticals since 1866
26 Christopher St., New York 14, N. Y.

BIBLIOGRAPHY
1. Hyman, H. T.: An Integrated Practice of Medicine (1950)
2. Rehfuss, M. E., et al: A Course in Practical Therapeutics (1948)
3. Goodman, L., and Gilman, A.: The Pharmacological Basis of Therapeutics (1941). 22nd printing, 1951.
4. Sollmann, T.: A Manual of Pharmacology, 7th ed. (1948), and Useful Drugs, 14th ed. (1947)

LETTERS TO THE EDITOR

This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers, who are invited to comment on controversial subjects, names will be omitted when requested.

Refresher Article Satisfies Need

"I received the article I requested, a summary of 'Discogenetic Head, Neck, Shoulder, Arm and Chest Pain,' and wish to thank you for the courtesy.

"I find such a summary satisfies my need and desire for a comprehensive and practical understanding of a subject, so necessary in medical practice, and an aid in my desire to be a good and well-informed doctor.

"To pardon the comparison—it's like grasping the brass ring on the merry-go-round of medical practice."

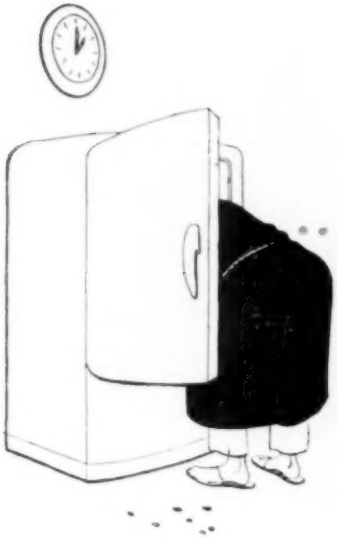
E. I. Gersh, M.D.
New York, N. Y.

Pneumoconiosis in California

"The recent furor over the increase in pneumoconiosis in California due to the diatomaceous earth as it is processed in Lompoc for filters for use in the purification of beer and sugar and dynamite and glass wax, etc. (the product is called diatomite) moves me to call attention to the need of increased alertness among general practitioners in the diagnosis of pulmonary troubles.

"As I have gone up and down the earth in the last sixty years I have seen medical men agitated by the finding of new forms of lung pathology; first it was tuberculosis as the cause of consumption, then it was the anthracosis of cities and coal mines, then the silicosis of the zinc mines (Jop-

—Concluded on page 64a



. . . . control CHEATERS!

"Patients who have been gaining excessively but are on reduced caloric intakes, will tell you that they are not eating excessively; that there is something wrong with them because they gain weight. Obviously they are cheating, consciously or unconsciously. One cannot gain weight on air and water."[1]

AMPLUS helps control the obese patient's urge to cheat. The appetite-curbing effect of dextro-Amphetamine Sulfate, plus the nutritional supplementation of 8 Vitamins, 11 Minerals, and Trace Elements increases patient co-operation, and guards against nutritional deficiencies frequently encountered in obese patients.

1. Dieckmann, W. J.; Turner, D. F.; Meiller, E. J.; Straube, M. T.; Grossnickle, K. B.; Pottinger, R. E.; Hill, A. J.; Savage, L. J.; Forman, J. B.; Priddle, H. D.; Beckette, E. S.; Schumacher, E. M.: Diet Studies in Pregnant Patients. Obst. & Gynec. Surv. 3:731 (Oct.) 1948, p. 742.

To help cheaters to self-control, prescribe . . .

AM PLUS

Each capsule contains:

DEXTRO-AMPHETAMINE SULFATE	5 mg.
Calcium	242 mg.
Cobalt	0.1 mg.
Copper	1 mg.
Iodine	0.15 mg.
Iron	3.33 mg.
Manganese	0.33 mg.
Molybdenum	0.2 mg.
Magnesium	2 mg.
Phosphorus	187 mg.
Potassium	1.7 mg.
Zinc	0.4 mg.
Vitamin A	5,000 U.S.P. Units
Vitamin D	400 U.S.P. Units
Thiamine Hydrochloride	2 mg.
Riboflavin	2 mg.
Pyridoxine Hydrochloride	0.5 mg.
Niacinamide	20 mg.
Ascorbic Acid	37.5 mg.
Calcium Pantothenate	3 mg.

Available at all Pharmacies

J. B. ROERIG AND COMPANY

536 N. Lake Shore Drive • Chicago 11, Ill.

WANTED . . . by all physicians—an effective, pleasant tasting, nonconstipating antacid for the relief of gastric hyperacidity and the protection of inflamed or ulcerated areas of the gastrointestinal mucosa.

AVAILABLE . . . Gelusil Antacid Adsorbent combines the advantages of nonreactive aluminum hydroxide and magnesium trisilicate. Unaltered by contact with the gastric contents this stable, acid-buffering gel has a prompt, prolonged antacid effect protecting the inflamed mucosa from acid irritation.

Constipation—not uncommon in alumina gel therapy—is practically non-existent with Gelusil Antacid Adsorbent.[1]

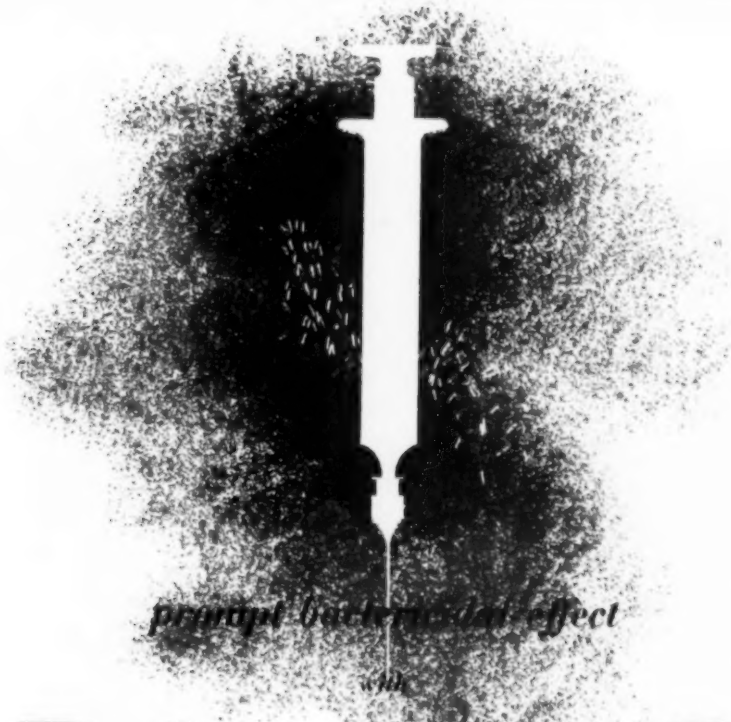
GELUSIL® 'Warner'

Gelusil Antacid Adsorbent may be obtained in two pleasant tasting forms: liquid or tablet. Two Gelusil tablets or two teaspoonfuls of Gelusil liquid may be given after meals or as often as necessary to relieve symptoms and hasten recovery.

Gelusil Liquid—bottles of 6 and 12 fluidounces.
Gelusil Tablets—boxes of 50 and 100, and bottles of 1000.

1. Rossien, A. X. and Victor, A. M.: The Influence of An Antacid (nonreactive aluminum hydroxide gel) On Evacuation of the Bowels and the Fecal Column, *Am. J. Dig. Dis.*, 14:226, 1947.

WILLIAM R. WARNER
DIVISION OF WARNER-HUDNUT, INC.
New York Los Angeles St. Louis



prompt bactericidal effect

with

Polymyxin B

SULFATE

Pfizer

. . . for Gram-negative infections caused or complicated by Ps. aeruginosa (Bact. pyocyaneum), Polymyxin B Sulfate, Pfizer is supplied in the following forms:

Parenteral

POLYMYXIN B SULFATE, PFIZER, STERILE is intended for intramuscular or intrathecal administration in hospitalized patients only. (Vials containing 500,000 units—equivalent to 50 mg.)

Topical

POLYMYXIN B SULFATE, PFIZER, STERILE for use as a dusting powder, for preparation of topical ointments, wound dressings, etc. (Vial containing 200,000 units—equivalent to 20 mg.)

POLYMYXIN B SULFATE, PFIZER, OINTMENT for localized skin infections, burns, etc. (½ oz. tube providing 20,000 units per gram—equivalent to 2 mg.)

Antibiotic Division, Chas. Pfizer & Co., Brooklyn 6, N. Y.

World's Largest Producer of Antibiotics

TERRAMYCIN • PENICILLIN • STREPTOMYCIN • DIHYDROSTREPTOMYCIN • COMBIOTIC • BACITRACIN • POLYMYXIN

methischol CAPSULES • SYRUP

	Each capsule provides	Therapeutic dose of 9 capsules provides
CHOLINE DIHYDROGEN CITRATE*	0.28 Gm.	2.5 Gm.
dl-METHIONINE	0.11 Gm.	1.0 Gm.
INOSITOL	0.083 Gm.	0.75 Gm.
VITAMIN B_{12}-B_{12b}	1 mcg.	9 mcg.
LIVER CONCENTRATE AND DESICCATED LIVER**	0.087 Gm.	0.78 Gm.

THREE TABLESPOONFULS OF METHISCHOL SYRUP EQUAL IN POTENCY TO NINE METHISCHOL CAPSULES

*in 3 tablespoonfuls Syrup as 1.14 Gm. choline chloride

**in 3 tablespoonfuls Syrup as 1.2 Gm. liver concentrate

Bottles of 100, 250, 500 and 1000 capsules, and 16 oz. and 1 gallon syrup.

NOW CONTAINS VITAMIN B_{12}

in coronary occlusion
hypercholesterolemia
diabetes
liver disorders
hypertension
obesity • nephrosis . . .

these patients deserve the potential benefits of this complete lipotropic formula . . .

helps normalize cholesterol and fat metabolism

in liver disease increases phospholipid turnover, reduces fatty deposits and stimulates regeneration of new liver cells.

Write for samples and detailed literature.

U. S. VITAMIN CORPORATION
CASIMIR FUNK LABORATORIES, INC. (affiliate)
250 EAST 43rd STREET • NEW YORK 17, N. Y.

MODERN MEDICINALS

These brief resumes of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

Armatinic Special Capsulettes, The Armour Labs., Chicago 11, Ill. In certain macrocytic anemias, including the megaloblastic anemias of pregnancy and infancy, and in the macrocytic anemias of nutritional origin and sprue, as well as for the growth-producing effect of the B-12 in each capsulette. **Dose:** As determined by the physician. **Sup:** In bottles of 100 capsulettes.

Avitum Capsules, Ives-Cameron Co., Inc., New York 16, N. Y., in cases of Vitamin A deficiencies due to insufficient intake or decreased ability to absorb, utilize or store Vitamin A—particularly in gastro-intestinal diseases leading to impaired fat utilization (sprue, celiac disease, etc.), or in liver diseases impairing Vitamin A storage: in the management of hyperkeratosis, nightblindness and acne. **Dose:** One capsule daily or as determined by physician. **Sup:** 25,000 U.S.P. Units in bottles of 100 capsules; 50,000 U.S.P. Units in bottles of 30 and 100 capsules.

Cilfomide, Winthrop-Stearns, Inc., New York 18, N. Y. For the simultaneous treatment of infections susceptible to oral administration of both penicillin and sulfonamides. In pneumococcus pneumonia, gonorrhea, mastoiditis, scarlet fever and urinary tract infections. For prophylaxis, used before and after tooth extraction, tonsillectomy, cesarian section and minor surgical procedures. In acute infections with bacteremia or septicemia, may be administered after parenteral use of penicillin has rendered the blood cultures negative and has controlled the acute condition. **Dose:** As determined by physician. **Sup:** In powder form, in 2 oz. bottles, buffered and flavored with chocolate and mint; and in scored tablets, in bottles of 50.

Cortone, Merck & Co., Inc., Rahway, N. J. Now available in a 5 mg. tablet size for rheumatoid arthritis, Addison's Disease, adrenogenital syndrome, and adrenalectomized patients. **Dose:** As determined by physician. **Sup:** In bottles of 50 tabs.

Cumertilin Sodium, Endo Products, Inc., Richmond Hill, N. Y. As a diuretic for dropsy, in cardiorenal diseases, ascites of liver disease, nephrosis, and other conditions where marked diuresis is indicated. **Dose:** Two cc. intramuscularly or 1 to 2 cc. intravenously, repeated in accordance with the edematous state of the patient and the degree of dehydration desired. Initial dose should be 0.5 cc. or less to detect the occasional and rare cases of sensitivity to mercurials. **Sup:** In 1 and 2 cc. ampuls in boxes of 6, 12, 25 and 100.

Injection Wyamine Sulfate, Wyeth, Inc., Philadelphia 2, Pa. In myocardial infarction, in hypotension associated with surgical procedures and in hypotension resulting from or occurring during spinal anesthesia. Also of value in management of marked hypotension of medical etiology: after conversion of ventricular tachycardia, in aortic stenosis with congestive failure, and in pulmonary infection. **Dose:** Administered either intravenously or intramuscularly. Amount to be determined by physician. **Sup:** In vials of 1 cc. and 10 cc.

Thenfadil-A.P.C., Winthrop-Stearns, Inc., New York 18, N. Y. For symptomatic treatment of upper respiratory infections, particularly the common cold. **Dose:** Adults, 1 tablet at onset of cold and 1 tablet every 4 hours for 3 to 4 days thereafter. **Sup:** In bottles of 50 tablets.

Trophite, Smith, Kline & French Labs., Philadelphia 1, Pa. An appetite, growth and tone-promoting tonic for the child who does not eat adequately or as an adjunct in treating the chronically ill or undernourished child, and as nutritional supplement in chronic diarrhea and celiac disease. **Dose:** One teaspoonful daily, or as directed by physician. **Sup:** In bottles of 4 fl. oz. (118 cc.).

Vitetrin Tablets, E. R. Squibb & Sons, New York, N. Y. New name for "Basic Formula" tablets, for treatment of nutritionally deficient oral tissues. **Dose:** As determined by physician. **Sup:** In bottles of 30, 100 and 250 tablets.

Prelude to asthma?

not necessarily . . .

Tedral, taken at first sign of attack, often forestalls severe symptoms.

in 15 minutes. . . Tedral brings symptomatic relief with a definite increase in vital capacity. Breathing becomes easier as Tedral relaxes smooth muscle, reduces tissue edema, provides mild sedation.

for 4 full hours. . . Tedral maintains more normal respiration for a sustained period—not just a momentary pause in the attack.

Prompt and prolonged relief with Tedral can be initiated any time, day or night, whenever needed without fear of incapacitating side effects.

Tedral provides:

theophylline	2 gr.
ephedrine	⅜ gr.
phenobarbital	⅛ gr.

in boxes of 24, 120 and 1000 tablets

Tedral

CHILCOTT *Laboratories* DIVISION OF The Maltine Company MORRIS PLAINS, NEW JERSEY

antispasmin is the most potent of a large series of spasmolytic substances synthesized by Rosenmund and coworkers.[3] Outstandingly effective in the control of spasm associated with peptic ulcers, gastritis, colitis, cardiospasm, dysmenorrhea, and other conditions involving smooth muscle spasm.[2,4,5]

dosage usual adult dose, 1 to 3 tablets daily, taken after meals. In cardiospasm, administer *before* meals.

supplied white, scored tablets, containing 120 mg. *Antispasmin* Citrate, bottles of 100, 500, 1,000.

1. Kulz, F. and Rosenmund, K.W., Klin. Wchnschr., *17*:344 (1938).
2. Weiss, S., Rev. Gastroenterol., *12*:436 (1945).
3. Kulz, F., Rosenmund, K.W., *et al.*, Ber. deut. chem. Gesellschaft, 72B; 19; 2161 (1939).
4. Lux, E., Klin. Wchnschr., *17*:346 (1938).
5. Ohr, A., Therapie d. Gegenwart, *80*:29 (1939).

Safer—yet 2 to 3 times more powerful than papaverine[1,2]

superior spasmolytic

Antispasmin

(N-ethyl-3,3' diphenyldipropylamine, Raymer)

To relax smooth muscle spasm

RAYMER

PHARMACAL COMPANY
Pharmaceutical Manufacturers
Jasper and Willard Streets, Philadelphia 34, Pa.

WYETH
INCORPORATED
1401 WALNUT STREET • PHILADELPHIA 2, PA.

Announcing . . .

Injection
W Y A M I N E® Sulfate
Pressor amine with gentle,
sure and sustained response

Dear Doctor:

When the coronary or surgical hypotensive patient's blood pressure falls, it must be supported. Injection Wyamine Sulfate gives the physician a new, proved aid which will help accomplish this objective.

The pressor response to Wyamine is gentle, sure and sustained, comparable with that of ephedrine in intensity. Wyamine, in contrast to many presently available preparations, including ephedrine, is remarkably free from any undesired side effects. You can inject Wyamine without exposing your patient to the dangers of acceleration of the heart beat and arrhythmia; without fear of causing cerebral stimulation with its attendant restlessness and excitation.

We feel certain you will agree that Wyamine should be in your bag. It is supplied in vials of 1 cc. and 10 cc. (15 mg. Wyamine base per cc.).

MEDICAL DEPARTMENT
Wyeth Incorporated

FOR A FAST, POSITIVE, BLOODLESS TECHNIQUE

GOMCO®

CIRCUMCISION CLAMPS

NO SUTURES REQUIRED for the NEWBORN

You are interested in a circumcision technique which is faster—has a simpler procedure—gives clean-cut incisions which seal in 24 hours—and greatly reduces the incidence of after-hemorrhage and infection. You are urged to use Gomco Circumcision Clamps. They are assisting a large part of the profession to obtain these results consistently. Available in 7/16" to 1⅜" glans diameter sizes. Ask your dealer!

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828 East Ferry St. **Buffalo, N. Y.**

DAY

Each Dainite Day Tablet contains:

Sodium Pentobarbital	¼ gr.
Aminophylline	3 gr.
Ephedrine HCl	¼ gr.
Benzocaine	¼ gr.
Aluminum Hydroxide	2½ gr.

NITE

Each Dainite Nite Tablet contains:

Phenobarbital	⅜ gr.
Sodium Pentobarbital	½ gr.
Aminophylline	4 gr.
Benzocaine	¼ gr.
Aluminum Hydroxide	2½ gr.

Dainite Tablets provide day and night protection for the asthmatic patient, with almost complete absence of side-effects.[1] In a series of 100 patients with bronchial asthma and pulmonary emphysema receiving Dainite Tablets on arising and retiring, only 2 patients noted nausea[1] despite the daily, full therapeutic dose of aminophylline. Marked objective improvement of respiratory function, with significant relief of wheezing, dyspnea and cough, has been observed.[1]

DAINITE (Irwin-Neisler) provides a night and day difference in treatment that meets the requirements of the active and the resting patient. The use of antinausea factors safely permits a more effective, prolonged dosage of aminophylline than previously available in asthmatic preparations.

Supplied as the DAINITE UNIT containing 48 Day Tablets and 18 Nite Tablets in a unique dispensing unit . . . at prescription pharmacies everywhere. **Average Dose:** One Dainite (Day) Tablet t.i.d. before meals; one Dainite (Nite) Tablet at 10 P.M.

1. J.A.M.A. 147:730-737 (Oct. 20) 1951. Literature and detailed dosage information on request.

IRWIN, NEISLER & COMPANY • DECATUR, ILLINOIS
Research to Serve Your Practice

for Dramatic Response...

in HYPERTENSIVE CRISES

solution INTRAVENOUS

VERILOID®

A powerful hypotensive agent, Solution Intravenous Veriloid, on slow infusion by vein, is capable of dropping the blood pressure in a matter of minutes in the majority of patients.

Thus it presents a lifesaving emergency measure in the conditions in which a continuing state of extreme hypertension might lead to serious complications. Hence it has rightly been termed "A Must in Every Emergency Bag."

In hypertensive states accompanying cerebral vascular disease, in malignant hypertension, and in hypertensive crisis (encephalopathy) arterial tension can be reduced—under full control of the physician—to a point compatible with the patient's condition. The only contraindications are pheochromocytoma and coarctation of the aorta; in patients receiving quinidine therapy the drug should be given with caution.

Solution Intravenous Veriloid, 0.4 mg. of Veriloid standard reference powder per cc., is supplied in 5 cc. ampules.

Solution Intravenous Veriloid makes available for the first time a purified fraction of Veratrum viride, a product of Riker Laboratories research, generically designated alkavervir, which can be administered by vein. Complete instructions for its use accompany each ampule. Physicians are invited to send for detailed literature.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

RIKER LABORATORIES, INC.

8480 Beverly Boulevard — Los Angeles 48, California

for your low-sodium-diet patient

DIASAL

to help him stay on his diet

DIASAL is an outstanding salt substitute. In addition to its fine salt taste, it contains glutamic acid to bring out the natural flavor of each food —and it can be used in cooking. At the same time its high potassium content protects your patient against potassium depletion, a hazard of low-sodium diets.[1]

DIASAL LOOKS LIKE SALT

DIASAL TASTES LIKE SALT

DIASAL POURS LIKE SALT

DIASAL IS SAFE.....

"Of all the products [salt substitutes] studied, DIASAL most closely approximates sodium chloride in . . . pour-quality, appearance and stability."[2]

Contains No Lithium · No Sodium · No Ammonium

Constituents: potassium chloride, glutamic acid and inert excipients

DIASAL may be freely prescribed in congestive heart failure, hypertension, arteriosclerosis and toxemias of pregnancy. It is contraindicated only in severe renal disorders and oliguria.

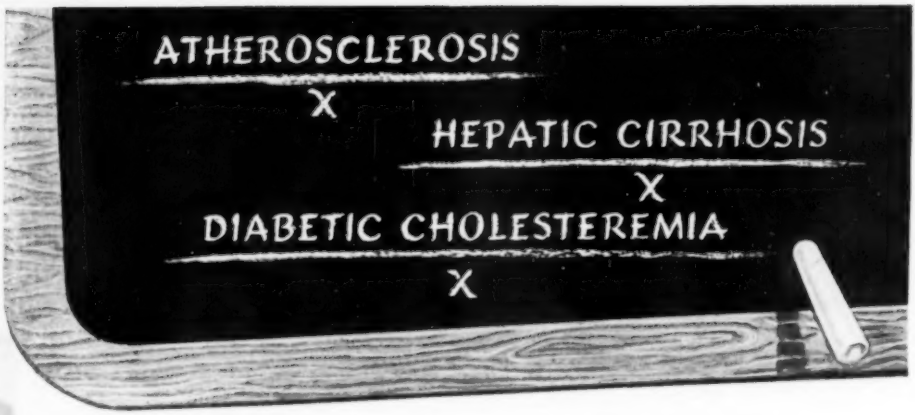
DIASAL—in 2-oz. shakers and 8-oz. bottles at all pharmacies.

Samples, literature and pads of low-sodium diets available on request.

1. Fremont, R. E.: Rimmerman, A. B., and Shaftel, H. E.: Postgrad. Med. *10*:216, 1951.
2. Rimmerman, A. B., et al: Am. Pract. & Digest Treat. *2*:168, 1951.

FOUGERA

E. FOUGERA & COMPANY, INC.
75 Varick Street, New York 13, New York



A COMMON DENOMINATOR?

Yes-- In these and other "high cholesterol diseases" such as xanthomatosis, severe hypothyroidism, nephrotic nephritis, and many geriatric conditions, there exists a common denominator in the form of disturbed lipid metabolism, often associated with impaired oxidative efficiency.[1,2]

A COMMON THERAPEUTIC AID?

Yes--

B-TROPIC

TRADEMARK

The Lipotropic Formula with a PLUS

Helps to restore or maintain normal lipid metabolism, secure the desirable balance between blood cholesterol and phospholipid levels,[3] and promote oxygenation. **B-TROPIC*** presents not only the synergistic lipotropic value of *choline* and *inositol*, but also the oxidation-stimulating effect of *thiamine*, *riboflavin*, and *nicotinic acid*.[2]

2 Agreeable Dosage Forms

B-TROPIC SOLUTION
Each fluidounce contains:

Tricholine Citrate (47% choline base)	6 Gm.
Inositol	2 Gm.
Thiamine Hydrochloride	3 mg.
Riboflavin	2 mg.
Nicotinic Acid	20 mg.

In a flavored, sugar-free vehicle

Bottles of 1 pint and 1 gallon

B-TROPIC CAPSULES
Each capsule contains:

Choline Dihydrogen Citrate	375.0 mg.
Inositol	125.0 mg.
Thiamine Hydrochloride	1.0 mg.
Riboflavin	0.5 mg.
Nicotinic Acid	5.0 mg.

Bottles of 100, 500, and 1000 capsules

1. Weidlein, E. R., Jr.: The Biochemistry of Inositol, Bibliographic Series Bulletin, no. 6, Pittsburgh, Pa., Mellon Institute, 1951. 2. Editorial, J. A. M. A. 141:392, 1949. 3. Gertler, M. M., et al.: Circulation 2:517, 1950.

*Trademark of The Vale Chemical Co., Inc.

THE VALE CHEMICAL CO., INC. *pharmaceuticals* ALLENTOWN, PA.

in peptic **ulcer...**

not just symptomatic relief

Chloresium® MUCINOID

tablets • powder*

provides Chlorophyll for the repair of affected tissues

The ability of CHLORESIUM Chlorophyll to promote the healing of *external* ulcerative lesions has been well established; recent investigations[1] indicate that it is equally effective in the management of *internal* lesions. The water-soluble chlorophyll derivatives in CHLORESIUM MUCINOID are combined with antacids in a mucin-like base to provide:

prolonged protective coating

CHLORESIUM's specially prepared, mucilaginous okra base clings tenaciously to affected areas, protecting against erosion and maintaining the active agent, chlorophyll, in prolonged contact with the lesion.

prompt antacid action

CHLORESIUM's magnesium trisilicate and aluminum hydroxide provide prompt, sustained antacid action without undesirable side effects.

healing of affected areas

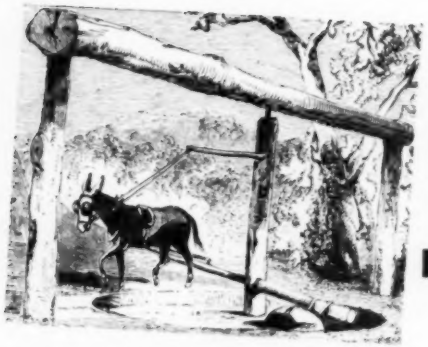
CHLORESIUM's water-soluble chlorophyll promotes healing by a direct reparative action on affected tissues.

CHLORESIUM MUCINOID is supplied in bottles of 50 and 200 tablets, and in boxes of 50 powders.

*formerly distributed under the name "CHLORESIUM POWDER."

1. Offenkrantz, W. G.: Rev. Gastroenterol. *17*:359, 1950.

RYSTAN COMPANY, INC., Mt. Vernon, N. Y. Rystan



when other external therapy seems to get **nowhere...**

accelerate healing with

Study[1], after study[2] after study[3] corroborates the "notable"[1] success of Desitin Ointment in easing pain and stimulating smooth tissue repair in lacerated, denuded, chafed, irritated, ulcerated tissues—often in stubborn conditions where other therapy fails.

Protective, soothing, healing, Desitin Ointment is a non-irritating, blend of high grade, crude Norwegian cod liver oil (with its unsaturated fatty acids and high potency vitamins A and D in proper ratio for maximum efficacy), zinc oxide, talcum, petrolatum, and lanolin. Does not liquefy at body temperature and is not decomposed or washed away by secretions, exudate, urine or excrements. Dressings easily applied and painlessly removed. Tubes of 1 oz., 2 oz., 4 oz., and 1 lb. jars.

write for **samples** and literature

DESITIN CHEMICAL COMPANY
70 Ship Street, Providence 2, R. I.

DESITIN®
OINTMENT
the pioneer external cod liver oil therapy

in **wounds**
(especially slow healing)
burns
ulcers
(decubitus, varicose, diabetic)

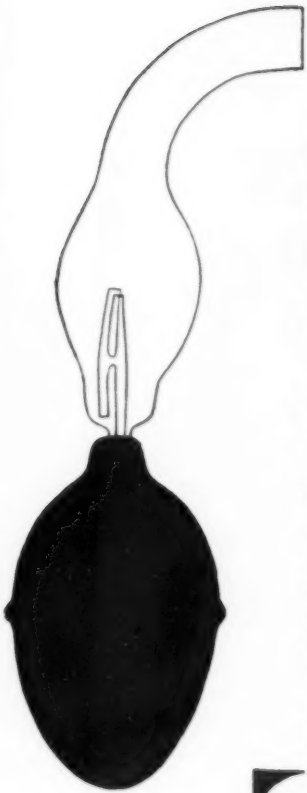
1. Behrman, H. T., Combes, F. C., Bobroff, A., Leviticus, R.: Ind. Med. & Surg. 18:512, 1949.
2. Turell, R.: New York St. J.M. 50:2282, 1950.
3. Heimer, C. B., Grayzel, H. G., and Kramer B.: Archives Pediat. 68:382, 1951.

Terramycin

directed dosage . . .

when indicated in the treatment
of acute and chronic infections
of the respiratory tract

aerosol



Broad-spectrum therapy in a new and convenient form for direct therapeutic concentration at the site of infection. Supplied in 10 cc. bottles containing 0.5 Gm. Crystalline Terramycin Hydrochloride in 75% propylene glycol solution. Each 1 cc. dose contains 50 mg. Terramycin for aerosol therapy in office or home. Simply administered with DeVilbiss No. 40 Nebulizer or similar device.

Pfizer

Antibiotic Division
CHAS. PFIZER & CO., INC.,
Brooklyn 6, N.Y.

world's largest producer of antibiotics

TERRAMYCIN
PENICILLIN
STREPTOMYCIN
DIHYDROSTREPTOMYCIN
COMBIOTIC
POLYMYXIN
BACITRACIN

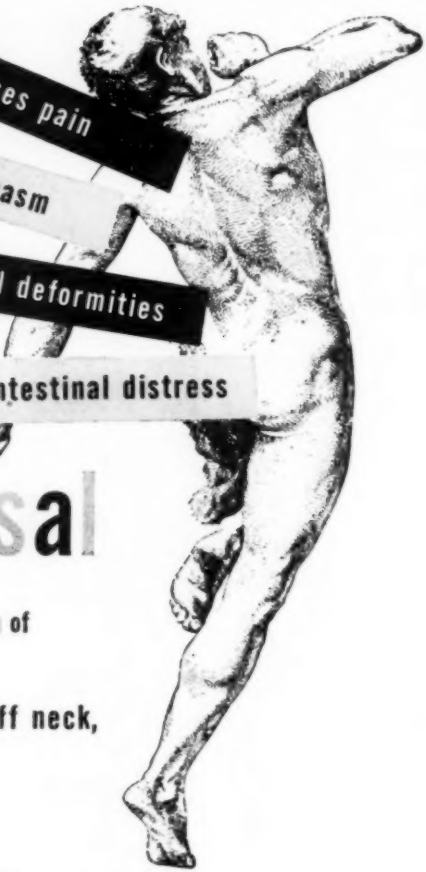
In **Rheumatic** conditions

relieves muscle-spasm which causes pain

relieves pain which causes spasm

helps minimize disabling postural deformities

controls concomitant gastro-intestinal distress



Mephosal

A **new** whole-patient approach to the problem of pain — spasm — more pain in

low back pain, sciatica, arthritis, stiff neck, night cramps, sacroiliac distress

and other common rheumatic disorders

MEPHOSAL—ELIXIR (new) and TABLETS—contains

	each tablet	each teaspoonful (4 cc.) elixir
Mephenesin—modern, safe, non-toxic, effective skeletal-muscle antispasmodic	125 mg.	400 mg.
Sodium Salicylate—specific for rheumatic pain	125 mg.	400 mg.
Homatropine Methylbromide—safest and most efficient gastro-intestinal antispasmodic to control concomitant g.i. distress.	1.25 mg.	2.5 mg.

Average Dose: 2 or 3 tablets or one teaspoonful elixir every 3 or 4 hours.
Supplied in bottles of 50, 100 and 500 tablets. Elixir, 8 oz. and 1 pint.

Samples and detailed literature to the profession on request.

Crookes

CROOKES LABORATORIES, INC.
MINEOLA, N. Y.

Protected for a whole day

'Perazil' gives practical protection from the effects of allergens. Observers have agreed that: "The percentage and severity of side reactions was very low. Due to the longer duration of action of 'Perazil', less frequent administration of tablets was necessary."[1]

'Perazil' was developed by The Wellcome Research Laboratories in the search for an ideal antihistaminic. Its chemical composition is unique. One 50 mg. tablet acts for 12 to 24 hours as a rule in relieving allergies.

'Perazil' **Cream** may be used for topical antihistaminic and antipruritic effect.

'Perazil'® brand

Chlorcyclizine Hydrochloride, 50 mg., Compressed, scored... also 'PERAZIL'® *brand Chlorcyclizine Hydrochloride* CREAM *1%*

1. Cullick, L., and Ogden, H. D.: J. So. Med. Assn., 43:643, 1950

Burroughs Wellcome & Co. (U.S.A.) Inc., *Tuckahoe 7, N.Y.*

LETTERS TO THE EDITOR

—Concluded from page 42a

lin), then the histoplasmosis from the tropics, then the cancers of urban life, then the coccidiosis of the West Coast, and now the diatomite from Santa Barbara county. It brings to mind the cyclorama of the Civil War at Atlanta; a dramatic parade of the new developments in pathology brought about by changes in environment and industry.

"We must not be caught napping by the development of new forms of disease."

George H. Hoxie, M.D.
Berkeley, Calif.

M.T. Is Splendid Journal

"I want to thank you for the splendid journal, the MEDICAL TIMES. There is none of my medical papers and journals that I receive and read with as much pleasure as the MEDICAL TIMES. The articles are easy to understand and are so practically selected that usually I find some one of them applicable to cases in my daily practice. For the same reasons I consider every one of your refresher articles extremely useful, especially now when it seems that our time is becoming more and more particularly precious. Those articles offer to us the only opportunity to review medical matter which otherwise would probably be impossible, for the time it would require to collect it. I believe your refresher articles are one of the best factors which makes us able to keep abreast, well informed of the continuous developments in the field of medicine.

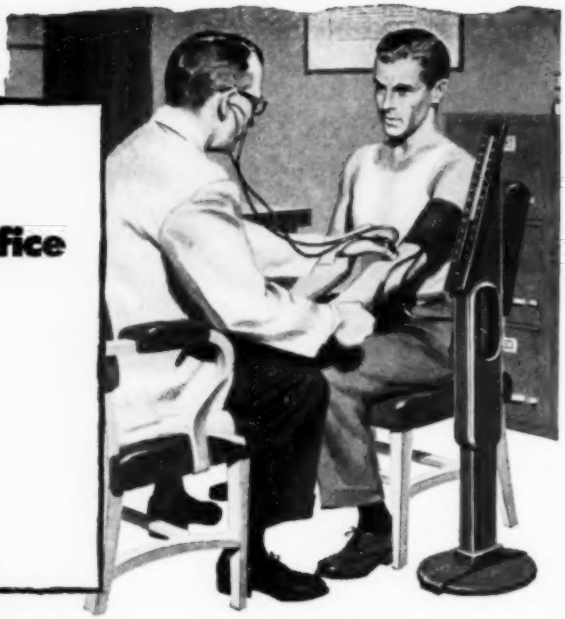
"Only those of the physicians who are really using all their time in the practice of medicine, can evaluate the exceptional usefulness and value of these condensed refresher articles."

Raffaele Moretti, M.D.
Los Banos, Calif.

For the Busy

Doctor's Office

the STANDBY model



FOR MAXIMUM SERVICE *anywhere* in the busy office...the STANDBY Model Baumanometer is light in weight, easy to move and complete in every detail. Simply place it next to the patient—*anywhere* in the office—by desk, chair or table. This true mercury-gravity instrument with the wide open EXACTILT Scale will give you scientifically accurate blood-pressure readings quickly and with the greatest of ease.

Ask any one of the thousands of doctors using a STANDBY Model...they tell us that it is a most satisfactory piece of equipment...that it is truly an indispensable part of their armamentarium.

Your surgical instrument dealer will gladly send you one for your inspection.

Accurate

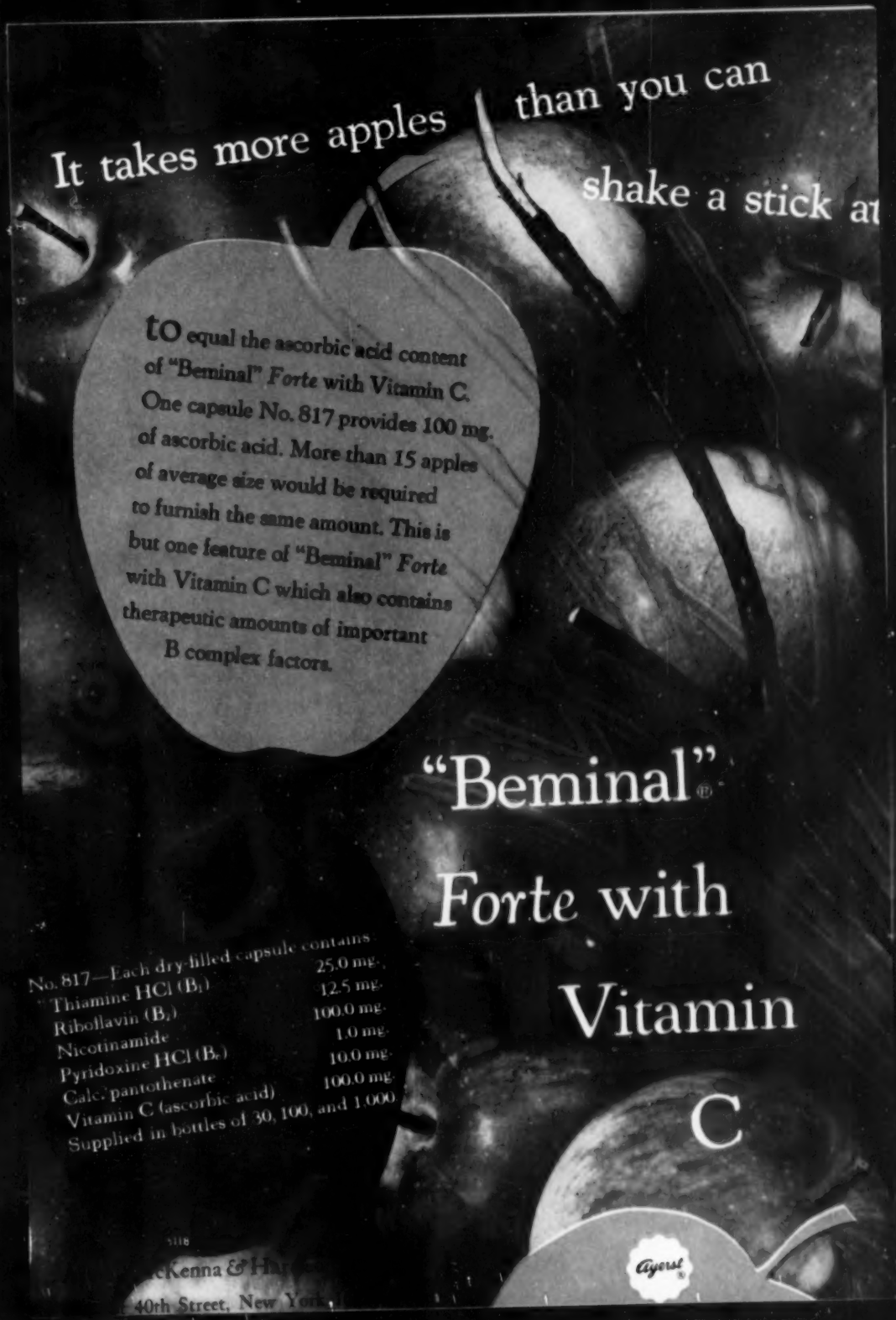
Practical

Modern

Lifetime Baumanometer

W. A. BAUM CO., INC., NEW YORK 1, N. Y.

SINCE 1916 ORIGINATORS AND MAKERS OF BLOODPRESSURE APPARATUS EXCLUSIVELY


It takes more apples than you can
shake a stick at
to equal the ascorbic acid content of "Beminal" Forte with Vitamin C. One capsule No. 817 provides 100 mg. of ascorbic acid. More than 15 apples of average size would be required to furnish the same amount. This is but one feature of "Beminal" Forte with Vitamin C which also contains therapeutic amounts of important B complex factors.
"Beminal"®
Forte with
Vitamin
C
No. 817—Each dry-filled capsule contains
Thiamine HCl (B_1) 25.0 mg.
Riboflavin (B_2) 12.5 mg.
Nicotinamide 100.0 mg.
Pyridoxine HCl (B_6) 1.0 mg.
Calc. pantothenate 10.0 mg.
Vitamin C (ascorbic acid) 100.0 mg.
Supplied in bottles of 30, 100, and 1,000
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40th Street, New York
Ayerst

Over and above the relief of menopausal symptoms, Harding reported that "a feeling of well-being or tonic effect was frequently noted," by his patients on "Premarin" therapy.

Harding, F. E.: West. J. Surg. **52**:31 (Jan.) 1944.

"PREMARIN"® in the menopause

Estrogenic Substances (water-soluble) also known as
Conjugated Estrogens (equine). Tablets and liquid.

Highly effective • Well tolerated • Imparts a feeling of well-being

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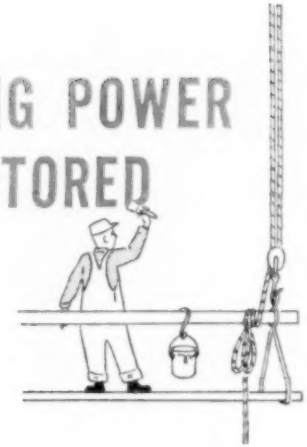
EARNING POWER RESTORED



DARTHRONOL systemic rehabilitation has helped to restore earning power and to re-establish self-reliance in thousands of chronic arthritics.

With adequate dosage of Vitamin D together with nutritional supplementation of 8 other Vitamins, **DARTHRONOL** is an integral part of the anti-arthritic regimen.

Help restore your patients' independence with **DARTHRONOL**.

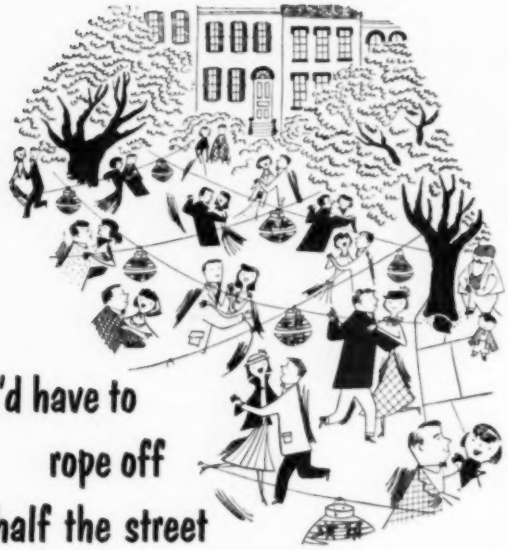
Each Capsule Contains:

Vitamin D	50,000 USP Units
Vitamin A	5,000 USP Units
Vitamin C	75 mg.
Vitamin B_1	3 mg.
Vitamin B_2	2 mg.
Vitamin B_6	0.3 mg.
Niacinamide	15 mg.
Calcium Pantothenate	1 mg.
Mixed Tocopherols (Type IV)	4 mg.

FOR THE ARTHRITIC

Darthronol

J. B. ROERIG AND COMPANY, 536 LAKE SHORE DRIVE, CHICAGO 11, ILL.



You'd have to rope off half the street

...to accommodate all the patients who represent each of the many conditions for which short-acting NEMBUTAL is effective

HOW MANY of short-acting NEMBUTAL'S 44 uses have *you* tried?

To many a patient with insomnia, for example, a good night's sleep may depend on no more than one 50-mg. (¾-gr.) capsule of NEMBUTAL Sodium. *Note the dosage:* only about *half* that required by many other barbiturates. It's enough to erase anxiety and ease the patient into refreshing sleep—yet so small there's rarely cumulative effect or barbiturate hangover.

If you'd like details on how adjusted doses of short-acting NEMBUTAL can achieve any desired degree or cerebral depression—from mild sedation to deep hypnosis—write for your copy of "*44 Clinical Uses for* NEMBUTAL." Just address a card to Abbott Laboratories, North Chicago, Illinois

Abbott

In equal oral doses, no other barbiturate combines QUICKER, BRIEFER, MORE PROFOUND EFFECT ***than...***

Nembutal®

(PENTOBARBITAL, ABBOTT)

44

OF NEMBUTAL'S CLINICAL USES

SEDATIVE Cardiovascular
Hypertension
Coronary disease
Angina
Decompensation
Peripheral vascular disease
Endocrine Disturbances
Hyperthyroidism
Menopause
Nausea and Vomiting
Functional or organic disease (acute gastrointestinal and emotional)
X-ray sickness
Pregnancy
Motion sickness
Gastrointestinal Disorders
Cardiospasm
Pylorospasm
Spasm of biliary tract
Spasm of colon
Peptic ulcer
Colitis
Biliary dyskinesia
Allergic Disorders
Irritability
To combat stimulation of adrenaline alone, etc.
Irritability Associated With Infections
Restlessness and Irritability With Pain
Central Nervous System
Paralysis agitans
Chorea
Hysteria
Delirium tremens
Mania
Anticonvulsant
Traumatic
Tetanus
Strychnine
Eclampsia
Status epilepticus
Anesthesia
HYPNOTIC
Induction of Sleep
OBSTETRICAL
Nausea and Vomiting
Eclampsia
Amnesia
SURGICAL
Preoperative Sedation
Basal Anesthesia
Postoperative Sedation
PEDIATRIC Sedation for:
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Blood transfusions
Administration of parenteral fluids
Electroencephalography
Minor surgery
Preoperative Sedation

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Surgical Care for the General Practitioner

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Whereas individualization of treatment is absolutely essential to the practice of good surgery, certain routines are logically sensible for daily patient care. There are innumerable minor variations from patient to patient. When such variations are unimportant, and when no serious departure from normal occurs in a patient's clinical course, routine procedures remain applicable. Departures from routine orders may be needed whenever unusual elements are present to complicate the preoperative, operative or postoperative condition or course of the individual patient.

To determine whether a patient is progressing normally requires detailed observations and experience. The following check list will assist both the surgeon and general practitioner in noting any departure from normal.

1. Temperature
2. Pulse
3. Respirations
4. Fluid intake and output
5. Bowel movements
6. Has the patient urinated?
7. Has the patient passed gas?
8. How is the patient's appetite?
9. Is the bladder distended?
10. Is the abdomen distended?
11. Are the dressings dry?
12. Is the wound clean?

Among other routines which are established are those for removal of sutures and care of dressings and wounds:

Orders for Removal of Sutures

The following applies to clean cases where the wound heals by primary union. Retention and skin sutures are removed at the same time (unless otherwise indicated).

1. APPENDECTOMY
   Through McBurney's incision ..... 7th day P.O.
   Through all vertical incisions ..... 10th day P.O.
2. HERNIORRHAPHY ... 10th day P.O.
3. ALL UPPER ABDOMINAL WOUNDS
   In thin abdomen ..... 10th day P.O.
   in fat abdomen ... 12-14th day P.O.
   In carcinoma ..... 14th day P.O.
4. THYROIDECTOMY AND FACIAL PROCEDURES
   Every other suture out 2nd day P.O.
   Remaining sutures out 4th day P.O.
   (unless it is a 2nd stage operation; then 6th day P.O.)

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The authors' book "Surgical Care" (The Graduate Press, Maywood, Ill.) offers a far more detailed presentation of their procedures.

5. MASTECTOMY
   Every other suture out 7th day P.O.
   Remaining sutures out 9th day P.O.
6. NEPHRECTOMY
   Retention sutures out . 8th day P.O.
   Skin sutures out . . . . 9th day P.O.

Dressings and Wounds

1. DRESSINGS saturated with blood should be reinforced. Frequent changing of dressings in the presence of sanguineous drainage invites infection.
2. CLEAN WOUNDS:
   a) Lift dressing at each end to observe wound every other day.
   b) DO NOT change dressings until sutures are removed.
   c) After sutures are removed, apply dry gauze dressing with adhesive strips.
3. INFECTED WOUNDS:
   a) Remove single suture for release of drainage.
   b) Keep dressing dry.
   c) Dry heat with light cradle or infrared lamp as ordered.
4. WOUNDS WITH ABUNDANT DRAINAGE may be changed p.r.n. (chart order).
5. NO VASELINE, VASELINATED GAUZE OR OINTMENTS should be placed over wounds contaminated by fecal material (i.e., colostomy, cecostomy, etc.), because bacterial growth is favored and drainage is interfered with.
6. Adhesive corsets are used for all abdominal cases except inguinal hernias.
7. Consult special orders in specific instances for removal of drains.

I. Parenteral Fluid Administration

Dehydration, hemorrhage and loss of acid-base equilibrium are three common surgical indications for parental fluid administration. Each of these may occur preoperatively or postoperatively.

Dehydration is recognized by listlessness, dryness of skin and mucous membranes, hemoconcentration and increased specific gravity of the urine. Treatment of dehydration varies with the cause. Simple water deprivation is correctible by giving physiological saline solution. Dehydration accompanied by loss of electrolytes, as in excessive sweating and vomiting or diarrhea, necessitates a consideration of acid base equilibrium as well as water replacement.

Acid-Base Equilibrium is maintained by chemical buffer systems in the blood and tissues. Mild or threatening imbalance exists in any severely dehydrated patient. The physiologic buffer systems correct mild imbalance when saline solution is applied in adequate quantity. Young children lack full capacity for re-establishment of acid-base equilibrium because their immature kidneys do not concentrate well. For them and for older individuals with acidosis or alkalosis, neutralizing solutions may have to be administered.

Acidosis may follow loss of sodium in diarrhea and in fistulae of the intestine including the pancreatic and biliary tracts. Circulatory embarrassment, from cardiac failure or surgical shock, interferes with renal elimination of acid wastes and results in acidosis. Starvation, diabetes and the use of a ketogenic diet may produce acidosis.

Clinical recognition of acidosis is familiar to all who have treated diabetics. The carbon dioxide combining power is decreased to about 40% or lower. Treatment can be based directly upon the laboratory report of the CO_2 combining power; for every one volume percent that plasma CO_2 is less than 55 (in a 150 pound man), give one of the following: (1) 40 cc. of 4% sodium bicarbonate solution intravenously. (2) 120 cc. of 1.3% sodium bicarbonate solution intravenously. (3.) 125 cc. of 1.75% sodium lactate 1.6 Molar solution intravenously.

Alkalosis results from loss of chlorides. Vomiting or excessive use of gastric suc-

tion removes chloride leaving excess acid radical. Treatment is aimed at restoration of the chlorides. However, each liter of vomitus or intestinal tract fluid removed by suction carries 4-6 gms. of potassium in addition to chloride loss. Consequently the ideal therapeutic solution appears to be KCl (0.2%) in physiologic saline solution. Physiologic saline alone is effective therapy for mild alkalosis because kidneys selectively excrete sodium and retain chlorides. The excretion of potassium is constant, regardless of the concentration of potassium ions in the body. The recognition of potassium deficiency is in itself, therefore, an important surgical problem.

Clinical recognition of alkalosis is based upon the increased neuromuscular tone observed. Reflexes are hyperactive. Carpopedal spasm may be elicited. Respirations are shallow and slow. The CO_2 combining power may be increased to 70 volumes per cent or above.

Severe alkalosis can be treated by parenteral administration of protein hydrolysates (5%) such as Amigen, Parenamine, Aminosol, Elamine, etc. In addition, 2% ammonium chloride may be given orally and carbon dioxide by inhalation.

Hypokalemia

Potassium deficiency is rarely observed in a patient who is taking food by mouth. The potassium content of an ordinary diet is sufficient to offset the daily urinary loss of potassium. Weakness, listlessness and anorexia are vague clinical signs. There is no reliable and pathognomonic clinical or laboratory sign. Knowing, however, that the excretion of potassium in the urine is constant, regardless of intake, deficiency can be postulated in any patient from whom oral or parenteral sources are withheld. Deficiency of potassium is particularly common in patients with undernutrition, extensive and traumatic surgery, burns, draining wounds, gastrointestinal fistulae, ileostomies, continuous gastric suction, vomiting and diarrhea. Dramatic improvement in a patient's general condition may follow promptly upon restoration of potassium reserves.

Potassium deficiency can be treated with parenteral administration of 0.2% KCl in 5% glucose or physiologic saline solution. This is not recommended in any patient whose condition will permit oral administration of KCl (by gavage if necessary). Oral feeding of 2 gms. of KCl t.i.d. is preferred. Good hydration is an important preliminary to intravenous administration of KCl. The rate of flow should not exceed one liter of 0.2% KCl in 4 hours. Oral feeding provides for physiologic control of serum concentration whereas too rapid intravenous administration can result in excessive serum concentration and "potassium death."

II. Anesthesia

Local anesthesia is the safest of all and it is therefore recommended whenever applicable. The effectiveness of local anesthesia is increased by adequate morphine-scapolamine narcosis prior to operation. Give an initial dose of 1/6 grain of morphine and 1/150 grain of scopolamine one hour before surgery.

Immediately after administration of premedication, darken the patient's room. One should also plug his ears with cotton and cover his eyes with gauze and bind this with a folded towel. Take his pulse and respiratory rate in ½ hour. If the pulse has not decreased below 60 per minute or the respiratory rate below 16 per minute, give a second dose of morphine (gr 1/8-1/6) but no more scopolamine.

In addition to the hypodermic, an oral or subcutaneous dose of a barbiturate should be given prophylactically to counteract Novocain toxicity.

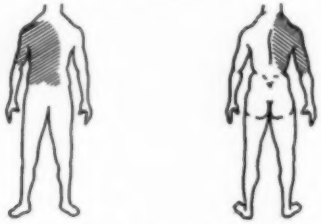
General anesthetics are desirable for all major surgery unless there is a specific contraindication. Many inhalation anesthetic agents, for example, are contraindicated for diabetics. For them, local or spinal anesthesia or sodium pentothal with

Skin areas involved in preoperative preparation

LAMINECTOMY

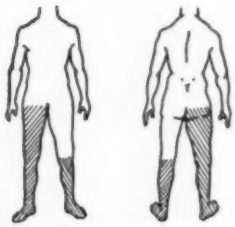
Hair line to lower limit of the gluteal region.

THORACOTOMY



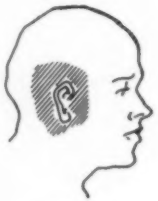
Prepare two to three inches past the midline on both the anterior and posterior aspects of the chest. From the clavicle to the level of the anterior superior spinous process.

FOOT AND LEG OPERATION



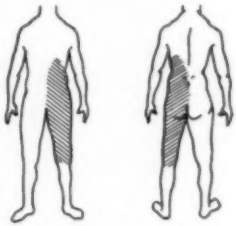
Foot or ankle operation — the extremity should be prepared to the knee.
Leg operation — from above the knee to well below the ankle.

MASTOIDECTOMY



Mastoid and head operation—the scalp is usually shaved about two inches around the site of the operation.
Brain operation—shave the entire head.

HIP OPERATIONS

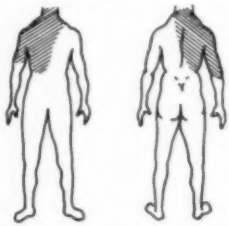


From the midline of the abdomen around to the back, including the buttocks on the affected side and down to the knee. All hair should be shaved from the pubes, abdomen and thigh.

LAPAROTOMY

The entire abdomen from nipple to the pubes.

MASTECTOMY

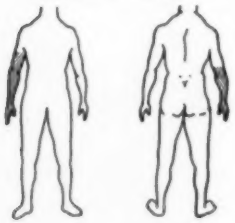


Radical breast amputations and chest cases—the entire chest from the median line to the back and including the axilla.

VAGINAL OPERATION

Lower abdomen, pelvic region and medial aspect of thigh.

HAND OPERATION

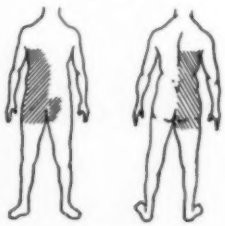


From finger tips to elbow, trimming the nails and scrubbing of hand with brush.

RECTAL OPERATION

Anal region, buttocks, and medial aspect of thigh.

NEPHRECTOMY



Nipple line to level of the upper pubis, midline of abdomen and back of the affected side.

curare is utilized. The individual condition of each patient, type of operation, expected blood loss and duration of anesthesia determine the selection of the best anesthetic agent.

Ether is the most widely used, probably because of its wide margin of safety. Ether produces splenic contraction, thereby decreasing blood loss in splenectomy. Unfortunately ether lowers the blood pressure, tending to increase shock. Ether is toxic to the liver, irritative to respiratory mucosa and productive of hyperglycemia and acidosis. Post-anesthetic retching and vomiting are common. Ether is highly explosive.

Cyclopropane induces relaxation. The induction period is quiet and only light premedication is required. Cyclopropane is not irritative to respiratory mucosa and has slight effect on intestinal mobility and blood sugar. A high concentration of oxygen can be maintained. The effect of this anesthetic wears off more rapidly. Unfortunately cardiac irregularities and laryngospasm are sometimes produced by cyclopropane. The spleen relaxes with this highly explosive gas. A vagomimetic response is also noticeable in the bronchi so that asthmatics should not be given cyclopropane. The heart muscle is sensitized by cyclopropane to the activity of epinephrine-like drugs. Such drugs must therefore be avoided when cyclopropane is being administered.

Nitrous oxide acts rapidly. Recovery is rapid when administration is discontinued. When relaxation is not essential to the surgical undertaking nitrous oxide is an ideal agent for short procedures. The odor is agreeable. The gas is not explosive. Nitrous oxide combines well with pentothal sodium. Heavy premedication is advisable. The failure of relaxation has often led to the use of heavy concentrations of nitrous oxide with insufficient oxygen. This is a real danger except in the hands of well-informed individuals.

Ethylene produces rapid induction and induces moderately good relaxation. Ethylene is admirable for short procedures where excellent relaxation is unnecessary. Like nitrous oxide, ethylene alone should not be employed if good relaxation is sought. Heavy premedication is required. Ethylene is another explosive gas.

Premedication

Premedication is not always essential but is always desirable. By reducing nervous tension prior to surgery, premedication prevents lowering of the patient's general resistance to shock and the inevitable trauma of surgery. Suppression of secretory activity (bronchial and salivary) assists in gas exchange and cuts down the likelihood of bronchial obstruction. Adequate sedation decreases the necessity for using a high concentration of anesthetic gas, thus increasing the safety of administration (more oxygen can be given). In addition, a smaller total quantity of anesthetic is needed for a well premedicated patient.

Morphine is usually administered as morphine sulfate, which is an excellent hypnotic and analgesic.

Scopolamine is one of the drugs chosen to act with morphine during the preanesthesia period. Scopolamine offsets the respiratory-depressant activity of morphine. In addition, scopolamine has a potent inhibitory effect on secretions and a depressant effect on the central nervous system so as to reduce excitement. In the presence of pain, scopolamine should not be given unless morphine is also used. Scopolamine alone may produce delirium in a patient suffering severe pain. Like atropine, scopolamine interferes with pupillary signs but the anesthetist has other indices of the depth of anesthesia.

Atropine stimulates the respiratory center and generally parallels scopolamine in its activities. Choice between the two agents depends upon personal preference and experience.

Barbiturates play a part in preanesthetic medication by allaying excitement and fear. A good night's rest before surgery is important. Barbiturates provide valuable prophylaxis against toxic reactions to such drugs as cocaine and Novocain used for local anesthesia.

III. Postoperative Atelectasis

Bronchial obstruction may prevent normal ventilation of a lung, lobe or lobule. The contained air is thereupon absorbed and the affected portion of lung collapses. Abdominal or chest pain during the postoperative period discourages normally deep respiratory movements. A tight abdominal binder interferes with full respiratory expansion. Atropine and irritating anesthetics result in the production of tenacious bronchial secretions. These factors permit otherwise ineffective quantities of bronchial secretion effectively to block bronchial passages and produce atelectasis. Obstruction can also occur from blood and aspirated matter.

Cyanosis, rapid respirations and a rapid pulse are suggestive signs which demand further enquiry. An earlier and less insistent hint of trouble is a moist cough; rales, wheezes and decreased breath sounds and dullness to percussion may be found later. Elevation of the diaphragm, increased density and even mediastinal shift may be seen on the roentgenogram. Inflammatory reaction (pneumonitis) may ensue.

Preventive treatment should be employed on every surgical case. Operative technique should always be gentle. The period of anesthesia should be as short as other important considerations permit. Narcotics (particularly such as depress respiration) should be used wisely and not too liberally. Atropine sulfate dosage must not be larger than really necessary. Postoperative care should include frequent changes of position, deep breathing exercises (rebreathing bag or CO_2 inhalations or CO_2 combined with O_2), and encouragement to cough. Tight abdominal binders must be avoided. Posturing the patient in slight Trendelenburg position during surgery favors drainage of the bronchial secretions.

Bronchial secretions should be aspirated at regular intervals during and immediately following surgery. Thick secretions which resist ordinary suction may be removed by suction directed through a bronchoscope. Sometimes a bronchial plug is successfully dislodged by back slapping or forceful coughing induced in some other way.

When a large proportion of the effective ventilatory area of the lungs is out of use because of atelectasis, oxygen administration may be required (cyanosis). Antibiotics are useful if pneumonitis develops. Antibiotics are indicated even earlier as prophylaxis against infection, in the presence of atelectasis.

IV. Acute Renal Insufficiency
(Lower Nephron Nephrosis)

Following burns, crush, injuries, surgical procedures or even following a transfusion, an acute renal shutdown may develop. Shock or hemorrhage can produce renal shutdown. Sulfa crystals, precipitating in the renal tubules, may obstruct the tubules. A similar mechanism may be responsible for renal insufficiency following incompatible blood transfusion. In that case, hemoglobin and myohematin crystals plug the tubules. There is not as clear a picture to explain many other cases of lower nephron nephrosis. Additional causes are: burns, severe alkalosis, heat stroke, pyrogen reaction, carbon tetrachloride poisoning.

Prolonged anuria develops in many cases. Persistently low urine specific gravity and low urea concentration may occur. About the 12th to 14th day, the patient may have diuresis with high salt output. Hypertension and azotemia develop and may persist long after recovery. Azotemia is influenced by diet, renal clearance and hydration.

When the diagnosis has been made, one is faced with a treatment problem. We postulate that there are three phases: (1) early tubular degeneration, (2) beginning recovery or regeneration about 8-12th days, (3) achievement of tubular recovery by the end of three weeks.

We must permit healing of the damaged tubules. The demands upon the tubules must be decreased so as to permit the patient to survive until the recovery period is reached. Deaths occur principally within the first week. Attempts to increase renal output during the oliguric phase are unwise and may result in:

1. generalized edema
2. mental aberrations
3. acidosis
4. death

Transfusions with blood (that has been doubly checked for compatability) is the one important therapeutic measure during the hypotensive or shock phase of acute renal insufficiency. Irreparable damage to the brain and debilitating anemia may occur if adequate blood replacement is not effected.

During the *renal insufficiency phase*, hydration, avoidance of acidosis and maintenance of nutrition are the indicated therapeutic measures. Water intake should exceed urinary output by 1-2 liters, depending upon your estimate of the patient's additional water loss from the lungs, skin, excreta and body secretions. Avoid excessive water and salt because the kidney is unable to handle them adequately in this phase. Delay of diuresis past the beginning of the third week may occur if dehydration is permitted to develop during the second week. Acidosis is avoided by giving enough oral sodium bicarbonate daily (about 4 gm.) to maintain the CO_2 combining power at 50 volumes per cent. The diet should include all vitamins. A soft or general diet is given, depending upon other factors (condition of the digestive tract in a postoperative patient).

The recovery or *diuresis phase* usually commences in the third week. Water and salt must be replaced. The urine should be measured. Intake of fluid must exceed urine loss by an amount equal to the insensible loss of water from lungs, etc. The urine may carry off 20-40 gms. of NaCl daily. This should be measured and replaced gram for gram. Watch for dehydration, mental aberration, convulsions and a shock-like state. Any of these may result from incomplete replacement of salt and water. Parenteral administration of salt and water may be discontinued 4-6 days after the peak of diuresis. This is also the time when azotemia abates. The patient is then on the road to recovery.

720 North Michigan Boulevard

Clini-Clippings

Bleeding time (Duke's Method). Normal bleeding time. Blots made on filter paper at half-minute intervals (after Todd and Sanford). Bleeding should cease in 3 to 5 minutes.

From Larkowski and Rosanova's "Hospital Staff and Office Manual."

Potassium Deficiency in the Surgical Patient

This summarization attempts to cover the essential information on the subject, including therapy, and is designed as a time-saving refresher for the busy practitioner.

About 1945, potassium deficiency began to receive attention from pediatricians and surgeons. At that time Darrow[1, 2, 3] discussed hypokalemia (potassium deficiency) in infants with severe diarrhea. Today, more and more emphasis is being given to hypokalemia in the literature and in the everyday practice of medicine. Recognition of hypokalemia has explained some previous unexplained, postoperative difficulties that are now subject to life-saving corrective measures.

Gastric suction and small bowel intubation are measures of great value in surgery. Widespread utilization of suction drainage for persistent nausea, paralytic ileus and other forms of intestinal obstruction has been of great benefit. At the same time, this common practice of sucking off intestinal liquids has increased the frequency with which potassium deficiency is produced.

Potassium Metabolism The daily diet is the only normal source of potassium. Intake is usually 3-4 gms., most of which is absorbed by the intestines. A small percentage is lost in the feces.

Normal excretion of potassium is handled by the kidneys. A renal threshold exists for most of the essential electrolytes. There is no renal threshold for potassium.

Excretion is constant, even in the face of lowered potassium intake and increased extra-renal potassium loss (as with small bowel intubation and suction). Marks[4] presents a series of cases which illustrate the point. Despite lowered potassium levels, these patients continued to excrete 15-36 mEq. of potassium daily. Urinary levels are directly dependent on and never lower than serum levels. Therefore a constant daily intake of potassium is essential if body levels are to be maintained.

Most bodily potassium is intracellular. Erythrocytes contain 420 mg%, whereas the serum level is 18-22 mg%. Any factor producing movement of potassium out of the cells tends to increase the serum level and the urinary level—which means increased excretion. Alkalosis, dehydration, shock and severe hemorrhage are among the factors which produce movement of potassium out of the cells and thereby increase the body's loss of potassium.

Laboratory Data The serum level of potassium is only an indirect measure of the body potassium. The body stores can be significantly lowered with very inadequate reflection of this lowering apparent in the serum potassium level. Depletion or lowering of intracellular potassium stores is reflected clinically by significant alterations in physiology. The striated muscle cells of the heart appear to be highly sensitive to a lowering of their potassium content. Follis[5] fed rats on low potassium diets and found resultant areas of focal necrosis in the heart

(and kidney). Abnormal EKG tracings provide evidence of alterations in the heart as a result of hypokalemia. Many authorities now accept EKG changes as a more reliable and practical index of tissue potassium deficit than laboratory estimates of serum potassium.

EKG changes are a direct reflection of intracellular potassium levels whereas serum levels are only an indirect measure of intracellular potassium. The earliest EKG changes consist of a slight lowering and rounding of the T waves. These changes are minor and can be detected only if a control EKG has been obtained for comparison. As intracellular levels continue to drop, the ST segment starts to sag, the T wave becomes widened, rounded and lowered and the T interval is prolonged. At this stage prominent U waves may appear. In the fully developed syndrome the EKG picture is characteristic.

When potassium is being used therapeutically the recognition of hyperkalemia is also important. In fact, marked elevation of serum potassium may cause death. The prevention of hyperkalemia becomes vitally important whenever potassium is administered parenterally. Muscular weakness and depressed reflexes are found in hyper- as well as hypokalemic states. Differentiation on a clinical basis is practically unreliable. The EKG changes offer a means of differentiation. Changes occur when serum levels rise to 26-30%. The T wave, instead of becoming lowered and rounded, becomes taller and wider. There is prolongation of the QRS complex. The S wave becomes wide and deep. The P wave becomes lowered with prolongation of the P-R interval. The P wave finally disappears and the QRS complex becomes increasingly bizarre with a bi-phasic curve. When this is seen on the EKG tracing, ventricular arrhythmias and arrest are threatening. These latter findings are associated with an irreversible condition. The situation must be recognized when there is peaking of the T waves, if a "cardiac death" is to be averted.

Kramer and Tisdall[6] developed the test most frequently used for the quantitative determination of serum potassium levels by chemical means. The test depends upon replacement of sodium by potassium in sodium cobalti nitrite and the oxidation of the resultant potassium cobalti nitrite by potassium permanganate. The test requires considerable time to run. The reagents used are unstable. Consequently a competent chemist is needed, rather than a laboratory technician, to obtain reliable results with this test.

The utilization of the flame photometer for the determination of serum levels has received much attention recently. This constitutes a rapid method of determination which will be used with increasing frequency as laboratories become more proficient with the flame photometer.

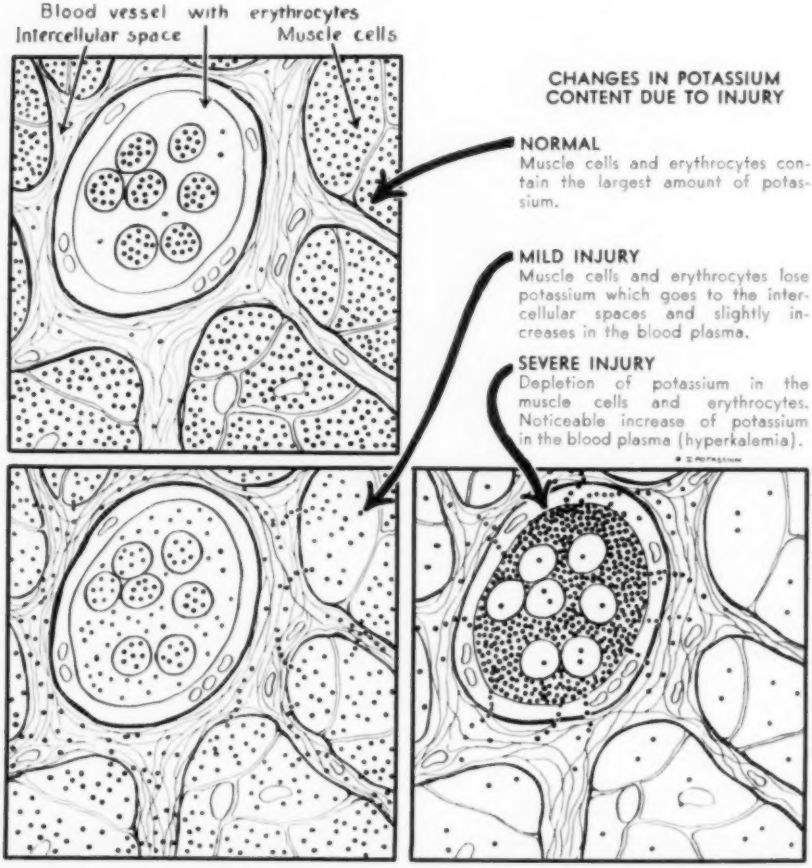
Symptoms Randall[5] divides the symptoms of potassium deficiency into two groups. The *acute syndrome* includes skeletal muscle weakness and sometimes paralysis of the intercostals and diaphragm. The *insidious syndrome* is more common and consists of drowsiness, languor, paralytic ileus with distention and signs of myocardial failure including pulmonary and peripheral edema. Marks presents one case in congestive heart failure which responded to potassium administration and slipped back into failure when potassium was withheld.

Experimentally, Webster showed in rats that intestinal motility decreased in direct proportion to potassium deficiency. After two months on potassium deficient diet, the rats were severely distended. The hypotonic gut became filled with secretions even before symptoms developed. The condition rapidly disappeared with potassium administration. Webster comments: "Several investigators have noted that rapidity of response is out of proportion to laboratory evidence of improvement. Explanation of this probably lies in the fact that

serum levels are not a true picture of intracellular potassium. The latter can be depleted to considerable extent before serum levels are lowered."

Clinical Considerations With the physiology of potassium metabolism in mind, one can predict conditions which will produce a drop in intracellular potassium. Decreased oral intake and continued maintenance of the patient on parenteral fluids which are deficient in potassium, will cause hypokalemia. Vomiting or prolonged nasal suction lowers potassium levels in two ways. A considerable amount of potassium is carried away in the gastric secretions. Secondarily there is a generalized effect on the entire system. The loss of chlorides by vomiting and gastric suction favors alkalosis. In the environment of alkalosis, intracellular potassium is mobilized and moves out into the serum. Severe dehydration, shock or hemorrhage lowers body potassium in a similar manner.

Case Report A 20 cm. ovarian cyst was removed from a 41-year-old woman. Postoperatively the woman vomited persistently until gastric suction was applied.



Even with repeated enemas, the patient passed no gas or feces during the first postoperative week. Intravenous 5% glucose in saline and 5% glucose in distilled water were used to prevent dehydration. At intervals, Wangensteen suction was clamped off and small liquid feedings were given. Invariably the feedings initiated a new bout of nausea. Suction had to be recommenced. The patient's condition was deteriorating day by day. On the ninth postoperative day, the woman was distended, semi-comatose and definitely dehydrated.

Observations on the ninth day were as follows: The pulse was 90, respirations 22, rectal temperature 102 and blood pressure 90/52. The tongue was coated, lips parched and eyeballs sunken. The abdomen was tympanitic and the diagnosis of bowel obstruction suggested itself. A roentgenogram of the abdomen showed gas-distended small bowel loops. This tended to confirm the idea of obstruction and to indicate the necessity for surgical relief. The remaining problem was to determine whether the patient could endure surgery.

To evaluate her physiological status, the following laboratory tests were run with the results shown:

Analysis	Patient	Normal
CO_2 combining power	96 vol. %	50-60 vol. %
Serum chlorides	530 mg. %	550-650 mg. %
B U N	33 mg. %	8-20 mg. %
Serum potassium	13 mg. %	18-22 mg. %

The EKG showed lowering and rounding of the T waves with some sagging of the S-T segment. Immediate surgery was contraindicated because of alkalosis, dehydration, etc.

Treatment consisted of parenteral therapy. The same day (ninth) the patient received 6 mg. potassium chloride and 9 mg. sodium chloride intravenously. Her chloride output that day was 16 mg. On the 10th day:

CO_2 combining power	77 vol. %
Serum chlorides	552 mg. %

She was given 3 mg. potassium chloride and 18 mg. sodium chloride as well as 500 cc. of blood (2.5 gm. of electrolyte) on the 10th day.

The eleventh hospital day the patient received 6 mg. of potassium chloride, 27 gm. of sodium chloride. Following this, the CO_2 combining power was 76 vol % and serum chlorides were 614 mg %. Operation to relieve the bowel obstruction was mandatory. Preoperatively, in 5 days the patient had received a total of 30 gm. of potassium chloride and 99 gm. of sodium chloride intravenously. She had also received 10 gms. of NH_4Cl and 1000 cc. of blood (5 gm. total electrolyte). This is a total electrolyte intake of 144 gm. in 5 days.

The patient was reoperated 15 days after the original surgery. The abdomen was entered through the old midline suprapubic incision. The ileum was distended and found to be strongly adherent in many places to bladder, uterus, right adnexa, appendix stump and peritoneum. Attempts to free the ileum resulted in several perforations. A total of 42 cm. of ileum was therefore resected, followed by an end to end anastomosis. Following surgery, the patient had an uneventful course. Bowel sounds were normal on the 2nd postoperative day. Wangensteen suction was clamped on the 3rd postoperative day and the patient was up in a chair. On the 4th postoperative day the patient passed gas per rectum and had a bowel movement. On the 5th day, the tube was removed and the patient was placed on full liquid diet. She was discharged from the hospital on the 10th postoperative day without complaint.

Discussion If we consider the patient presented above, we observe that she evidently became obstructed soon after her original surgery for ovarian cyst. We can only speculate as to the reason for the obstruction. But potassium deficiency may have contributed by producing paralytic ileus, atony and distention just as in the rats of Webster's experiments.[9] Nasal suction removed large amounts of potassium and also put the patient into alkalosis, thus

hastening potassium excretion. Small oral feedings merely stimulated increased production of gastric secretions and further hastened potassium loss. Randall[7] has shown that gastric secretions contain 9.2 mEq. of potassium per liter. Without addition of potassium to the parenteral fluids, there was NO potassium intake. We have in this patient an ideal situation for the rapid development of potassium deficiency; i.e., prolonged nasal suction and parenteral fluids deficient in potassium with normal urinary output. Hypokalemia was verified by EKG and measured serum levels. The patient's rapid response is believed to be in large measure due to the correction of serum potassium levels.

Treatment of Potassium Deficiency and Excess As mentioned above, laboratory findings of lowered serum levels are present only after the process has been present for an appreciable time. The wise clinician will institute treatment when conditions are present which predispose to potassium deficiency, BEFORE the development of overt signs.

A word of *warning* should be given. The administration of potassium is not without danger. Hyperkalemia can be much *more dangerous than hypokalemia.* Most clinicians feel that a patient can be on constant nasal suction and parenteral feedings for 24-48 hours without appreciably depleting body stores of potassium. If suction and parenteral feedings continue over 2 days, however, steps should be taken to replace the inevitable, incipient deficiency. The important precaution when potassium is administered parenterally is the maintenance of adequate urinary output. Patients with renal damage are a special problem.

The safest way to administer potassium is via the oral route. Potassium chloride 3-4 gm. daily can be given in fruit juice (to cover the unpleasant taste). If oral administration is not feasible, potassium chloride can be added to standard intravenous fluids. Darrow[4] has estimated that 3.5 mEq./Kg. can be administered safely over a period of 4-8 hours. Marks[7] gave 10 gm. of potassium chloride in liter of normal saline by clysis in 8 hours without untoward results. The patient in the above case report received 3-6 gm. every day in intravenous fluids over a period of 5 days before the second operation. This restored potassium levels to normal with marked clinical improvement.

Treatment of *hyperkalemia* consists of favoring potassium loss. All sources of potassium are withheld. Invariably the excess of serum potassium has resulted from parenteral administration. Oral feedings are replaced by gastric or enteric suction intended to increase the loss of potassium. There is really no excuse for getting into this situation. Prevention is therefore wiser counsel than therapy. Remember that any patient who can take oral feedings should not be given parenteral potassium. Avoid the parenteral route and you avoid hyperkalemia. When parenteral potassium is needed, hydration and proof of good renal output should be established before administration of potassium.

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Glimpses of The 1952 Acute Abdomen

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Surgery is constantly changing and that of the acute abdomen more rapidly than many other types. Not that change may necessarily mean progress but it means at least that fixed and accepted procedures are not to be permitted to ripen in unpruned luxuriance under the warm mulch of professional habit. A few rambling comments upon the less static features of the acute abdomen are presented hereunder.

Appendicitis in Young Children

The question of appendicitis in very young children has continued to be an intriguing one. I cannot help but feel that, if the alertness of physicians had kept pace with the educated alertness of parents, there would be fewer such cases missed. The universal cry that the patient came too late is changing. Now in many instances they come early enough but all too frequently we are still missing the diagnosis.

In spite of the splendid advances of antibiotics, time remains to the surgeon the essence of success. No amount of penicillin can compensate for a tardy diagnosis. There are certain things which those who first see a young child with abdominal pain should keep in mind and appendicitis should not be an afterthought. The trinity of symptoms: Pain. Fever. Vomiting—in a young child *is* appendicitis until it is proven not to be. Remember also that a child with acute peritoneal pathology is not usually mobile and will lie very still, whereas the child with intraintestinal infection, chest conditions or pyelitis is usually much more active around the bed. The quiet child is the dangerous child! Since the beginning of surgical time, efforts have been made to persuade doctors to do rectal examinations on everybody within their grasp but to small avail. In young children especially, it should not be omitted for the simple reason that the pelvis is very small and the entire pelvis, walls and contents are within easy access of the inquisitive finger. In some two-hundred-and-fifty-pound dowager it may be different, but the child is all revealing and should always be digitally explored.

My reason for stressing these obvious simplicities is that, even in the most recent and comprehensive surveys, it is obvious that it is not the surgery that is at fault but the same old failure in early diagnosis. Too much stress is too often laid upon white blood cell counts and sedimentation rates rather than upon simple clinical judgment and physical examina-

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tion. The child who is opened needlessly is seldom injured but the needy one who is long delayed is too often sacrificed. It is the early case that is the urgently surgical case. After the disease has been present so long that serious constitutional changes are evident, restitutional care becomes more urgent than appendectomy. Fluid balance must be restored, kidney function re-established; dehydration, hypoproteinemia and abdominal distention overcome. This cannot be done in an hour. Time which is used to reconstitute these children before surgery is time invested, not wasted. A rough estimate of need is that three hours preoperative preparation is required for each day the disease has existed. If fully constituted laboratory facilities are not available, skin moisture, mucous membrane moisture and urinary volume increase of excretion are reliable signs of a return to normal hydration.

The handling of right-sided inflammatory abdominal masses in young children may be a problem. They invariably mean of course that the appendix has already ruptured and become to a degree walled off, usually completely if a mass is felt. What to do? Far from constituting an indication for immediate operation, it calls for expectant procedures. Assuming that the child's physical depletion is being well cared for, these masses should be x-rayed daily for the determination of fluid levels and gas accumulations. Those that are increasing in this respect with expanding size and continuing or rising temperatures should be opened and drained. The vast majority of those masses, however, will slowly absorb and disappear. If this is the tendency, it should be encouraged. This is a long established procedure but needs constant reiteration. What to do if such an abscess resolves and the child fully recovers? Perhaps—What to do—is the wrong question. The question should be—When to do it. They should all be explored but not hurriedly. Three months at least or perhaps longer should elapse to allow full resolution to take place. It may be difficult to persuade parents to have their children undergo an appendectomy when they are now quite well but there should be no mortality now and there will be among those who remain unexplored. Occasionally you will find that, with the abscess formation, the appendix has sloughed off at its base and has been entirely absorbed and the operation is quite unnecessary. What of it? The other kinds will carry their own reward you will find and the unnecessary one is firmly established beyond peradventure in the temple of safety.

There is a strong tendency, particularly in England, to consider that the treatment of appendicitis is appendectomy and that they should all be removed as soon as restorative measures are complete, regardless of duration. Particularly is there a tendency in those cases where the expectant treatment has been successful, not to wait too long before doing an appendectomy as a second abscess may develop. If there is any question of the intelligence of the people or reluctance on their part to return a healthy child to hospital for interval appendectomy, then the child should be operated upon while the opportunity is still present.

Abdominal Pain We, as a profession, have been most dilatory in the handling of acute abdominal pain and, in spite of the multitude of substitutes, morphia largely remains the sheet anchor. Not only have we no instrument of precision to measure the intensity of pain but we have no means, other than purely subjective ones, of determining whether it actually exists or not. Acute pancreatitis is frequently a case in point. The intensity of pain is in itself frequently fatal and all too little consideration is given to its serious import. The associated toxicity fixes the attention while pain proceeds to kill!

In acute pancreatitis and other similar diseases where pain is intense, the amount

of morphia required to adequately relieve is an amount sufficient to cause other wholly undesirable effects: slowed respiratory exchange, diminished skin and kidney functions, arrested peristalsis and cerebral narcosis. And yet there are other measures available which are rarely used except in large teaching and research centres.

Epidural anaesthesia for the relief of acute abdominal pain should be available to almost any practitioner anywhere. The splendid advances of modern anaesthesia and the intensity of training of modern anaesthetists has made it such that one of these highly trained men is accessible to almost any community. Epidural anaesthesia, properly given, will release the patient from the incubus of intolerable pain at once and safely so. It can be given either as a continuous administration or by solution in some gelatin or oleagenous mixture which will prolong its action while other restitutional methods are being undertaken. Surgery for acute pancreatitis has largely given place to conservatism and is now rarely used, if the diagnosis is clear. It is reserved for the drainage of residual abscesses, the care of pseudocysts and the cleaning out of biliary systems in the postrecovery phase to prevent recurrence and to remove potential causes of recurrence. The management of acute pancreatitis cases has improved immeasurably in the last few years but the present failure is in the relief of its intolerable pain without deleterious side effects. Intravenous Sodium Pentothal or Sodium Amytal should not be withheld if other measures fail to suffice.

The use of Intravenous Procaine has not yet received the universal acceptance that it deserves. The part that arteriolar spasm plays in most acutely painful diseases is still far from apparent, whether acute pancreatitis, mesenteric thrombosis, frostbite, peripheral vascular disease, pulmonary embolism or a host of others. The unrelieved arteriolar spasm will often do more harm than the original lesion with which it is associated. Intravenous Procaine administration is easy and I have had no complications. 500 mgms. given intravenously in 200 c.c. of 5% Glucose over a 15 to 20 minute period, will produce an effect which lasts up to eight hours and has a wide margin of safety. Its effect is largely through the release of associated arteriolar spasm and is becoming an invaluable adjunct in surgery to other established procedures. This dosage may be repeated at eight hour intervals and one of its most obvious side effects is the release of arteriolar spasm in the kidneys with increased urinary excretion becoming apparent almost at once.

Acute abdominal pain will, I presume, always remains something of a problem but the vast majority of errors made by practitioners in assessing the aetiology of abdominal pain has to do with the small bowel, viz: unrecognized strangulations, minor mesenteric thromboses, unsuspected primary lesions, etc. Most of such errors are not so much due to inherent difficulty in the case itself, as with careless examination and placing a diagnostic label on the case too early. Probably no single factor will so dampen diagnostic ardour as to have cases labelled. They then come to be accepted as whatever the label says: bed four is MESENTERIC THROMBOSIS; bed five is ACUTE PANCREATITIS; but they may quite well be the reverse. Preconceived diagnoses, followed by perfunctory physical examinations, are not unknown in modern medicine.

The use of Intravenous Alcohol has been used sporadically for half a century but has undergone a recent revival. It may well serve to lessen the amount of morphia required in acute abdominal disease both pre and postoperatively. The action of intravenous alcohol has many features in common with procaine but, wholly apart from its high nutritive value, a selective action is possible according to dosage,

ranging from peripheral and cutaneous vasodilation to downright inebriation. This is where alcohol differs from morphia whose action is all-inclusive. Respiratory exchange is the first to be depressed with morphia and the last with alcohol. Its use as an adjuvant to intravenous glucose and protein hydrolysates is well known and little used. A litre of a 5% solution given over three hours provides food, quiets the patient, relaxes arteriolar spasm, promotes kidney function and minimizes the use of morphia. In acute abdominal disease, the judicious use of these accessory measures of pain relief will go a long way toward promoting a less depressive type of recovery.

Radical Surgery in Acute Cases Due to the high degree to which modern supportive therapy has attained, there has been an increasing tendency in recent years to try to encompass large resections in the presence of acute diseases. This is to be seen in isolated centres in this country and particularly in Europe. A good example of this is the perforated duodenal or gastric ulcer.

There may indeed be instances of gastric perforation under the best circumstances: in sthenic individuals, of recent duration, in experienced hands, where such resections are to be safely carried out. Yet, in the majority of instances, this is not so. It very definitely is not so if the duration of the incident is sufficient to warrant the necessity for preoperative restitutional care. Why is it unsafe to attempt radical surgery in the presence of obstruction, general peritonitis or severe depletion? The actual physical or anatomical venture may be easy enough. Usually suture lines will not heal so well under such circumstances, hypoproteinaemic states and hyperchloraemia from too much normal saline make for tissue oedema and sutures are inclined to cut out, as anyone of experience knows. But there is more to it than just that! The hypoproteinaemic state makes for a poor quality fibrin formation and this leads to poor healing, wound disruption and disappointment. The mere measurement and restoration of blood protein levels to normal is not an assurance that hypoproteinaemia has been overcome. There is no means of measuring the quality of that protein. It may have been and probably has been brought back to something like normal by borrowed blood, plasma or amino acids. Like borrowed money, this is a dangerous and expendable commodity. No amount of borrowed protein can compensate for the type that the patient makes by restoration of alimentary function. Such temporary measures of repletion are all to the good but must be regarded as purely temporary. The patient must do his own restoring in a permanent sense, whether blood protein, haemoglobin or potassium. As a result, it is good judgment in acute cases to do what must be done to permit life to be saved and to defer major procedures until such time as all remediable hazards have been overcome and the major procedure can be proceded with in the certainty that that is true. Too much dependence is being placed on borrowed blood. I do not decry transfusion but, where free blood is available through the Red Cross or similar philanthropic organization, its abuse is becoming notorious. One can now frequently see simple herniae being wheeled back to the ward with a blood transfusion running. Dehiscence of abdominal wounds, both within and without the abdomen, is more of a question of the adequacy of pre and postoperative restitutional care than of poor suturing. Many a skilfully performed operation fails through injudicious timing of its actual occurrence.

Conservative Treatment of Perforated Duodenal Ulcer In recent years enough cases of perforated duodenal and gastric ulcer have been treated conservatively to make some decisive comments as to its safety and advisability. The idea was born of the fact that we

have all seen frank perforations recover without operation, either by inaccessibility to surgical help, straight refusal, religious objections or whatnot. Many of these were too well known in the days before postural siphon drainage of the stomach, antibiotics, etc.

Certain factors should be kept clearly in mind. There is a difference between treating a known individual, whose background is well known to you, on the one hand, and a total stranger on the other. The same holds for acute haemorrhage. A man, known to be a rugged, healthy individual with an ulcer, a high acid, in privileged surroundings, who develops a minimal perforation on an empty stomach, with minimal fluid leak and great pain from his high acid spillage—is an ideal case for conservative treatment. Such a case usually has intense pain and rigidity from a chemical type of primary peritonitis which, left untreated, may go on to a frank infective peritonitis. The volume of free air is not important and not a reliable guide to procedure. Such cases—propped up, with continuous syphon drainage and especially assigned nurses to see that the tube never gets plugged, with antibiotics and frequent reassessment, usually do exceedingly well. However, a total stranger, perforating an ulcer, possibly in a beer parlor, with maximum spillage of air and contents, without the intense pain of chemical burning of the peritoneum, suggestive of a low acid type of ulcer, devoid of access to privileged and experienced help, is from the outset a surgical case and should be done at once, provided that he is seen early. If seen late, surgery should be performed as soon as depletion has been cared for.

Except in the most experienced hands, the simpler the operation the better. Simple closure, usually without drainage, is by and large the best. Radical resection is best left until complete restoration of health and then if necessary done as an elective procedure. Getting these people through without an emergency operation frequently saves them an operation. It has been my experience through the years that about one third of cases operated upon for perforation are cured by their perforation or the surgery incident to its repair; one-third continue to require medical and dietary care and one-third require subsequent gastric resection. It is in this latter group that the boon of conservative treatment for primary perforation is seen to greatest advantage. Patients appreciate not having to undergo two operations and surgeons appreciate not having to work through scar tissue, if this happy situation can be arrived at without adding to the risks of the patient. Those of us who have seen through the years the excellent results of early primary closure of perforations, find the newer concept difficult to accept. However, there is a definite place in surgery for the conservative treatment of acute perforations of the stomach and duodenum. We now have had nineteen cases treated in this way; seventeen with excellent results, one required later closure on the third day, one required drainage of a residual abscess. This latter complication may be of greater average frequency than one in nineteen. There has been no mortality.

The Conservative Treatment of Intussusception There would appear to be an increasing tendency on the part of paediatricians to attempt the reduction of cases of intussusception by non-surgical means. Rectal air injections or some fluid medium, massaged with pressure flow, under fluoroscopic control, will without any doubt whatever encompass the reduction of the very early intussusception occasionally. But how many of them are early enough to be so reduced? Oedema develops very rapidly and even in those of some duration, it is fascinating to see how easily the surgeon can reduce the intussusception down to the last inch. A drowning man may overcome his immersion from a great depth to within an inch

of the surface but it is that last inch that is of any importance to him! It requires a mighty man in the roentgenological department to proclaim with certainty that the last inch of an intussusception has been reduced. In the surgeon's hands it is reduced with certainty; in the roentgenological department, there can be nothing more than hopeful faith. The ileo-ileal type of intussusception can never be with certainty diagnosed and never reduced by non-surgical means. The only certain way to prove reduction is by laparotomy.

I have operated upon many cases of acute intussusception in my life and I have never had a fatality in an early case and few survivors amongst the late ones. There are few instances in emergency abdominal surgery where time is of such importance and it should not be wasted in vigorous therapeutic fiddling. Every child with an early proven intussusception should be operated upon at once and all of those in whom the condition is even seriously suspected by a competent team, should be opened without hesitation. When one weighs in the balance the awful penalties of indecision and delay on the one hand, with the negligible injury done to a child by an unnecessary laparotomy under modern conditions, there can be but one answer. Such a child is safer in the hands of a surgeon who has struggled no higher up the ladder of competence than the lower levels of mediocrity, than in the hands of the most skilled pediatrician-roentgenologist pneumatically equipped team which could be mustered on earth. In acute intussusception, temporizing methods are to be wholeheartedly condemned, except in situations where the services of even a moderately competent surgeon are unavailable and then only pending transport arrangements to more privileged surroundings.

The Mimicry of Chest Conditions The mimicry each of the other may be very close indeed and the most competent and experienced observer may for the nonce be confused. However, in modern times, the acute abdomen has lost much of its urgency and a more thoughtful and contemplative study is slowly replacing diagnosis by incision. The physiological outlook as opposed to the urgency of the physical assault is gaining momentum and more time is being taken to sort these cases each from the other.

Cases involving the diaphragm are liable to be most confusing but we are not being trapped so frequently nowadays as between pancreatitis and coronary occlusion, between basal pneumonia in children and appendicitis. Pain can be referred anywhere along the neurological tree of which it may be a part but tenderness is a local phenomenon and the clear differentiation between pain and tenderness should be made. Coronary occlusion may have intense pain and so may pancreatitis and mesenteric thrombosis but unless coronary occlusion has complicating mesenteric embolic phenomena associated with it, there is no actual localized abdominal tenderness.

In the differentiation of these cases, many physicians are afraid to use adequate sedation through fear of masking symptoms. This is all wrong. A patient should not be allowed to suffer needlessly while you make up your mind, besides which there is no better way of proving or disproving the existence of local abdominal tenderness than to completely sedate and then quietly palpate for tenderness.

In chest cases there isn't any; in abdominal cases there always is. The best way is by means of the original truth serum, Intravenous Sodium Amytal or Sodium Pentothal, sufficient to abolish consciousness but not response to pressure. With pain relieved by light unconsciousness, a patient who consistently resents pressure over a localized area of abdomen must be assumed to have some abdominal lesion. Chest and abdominal x-ray plates,

electrocardiograms, catheter specimens for blood and serum amylase determinations take little time and, when used with unhurried physical examination and with no preconceived fixation of ideas, usually result in a clarification of a beclouded situation.

All too frequently, the chest and abdominal plates taken in emergency acute abdominal work have to be taken at night by technicians and interpreted by the busy and usually unqualified practitioner himself. But this constitutes a labour problem and the busy surgeon must bow his head in reverence before the dictates of the temples of toil.

Strangulation Obstruction Strangulation obstruction of small bowel continues to take pride of place in the matter of urgency and yet most of the errors in diagnosis in the acute abdomen have to do with obstructive lesions of the small bowel.

All strangulated bowel is tender. When the normal symptoms of bowel obstruction have in addition an area of localized tenderness then strangulation obstruction must be presumed. Reference to the symptomatology and findings in strangulated inguinal hernia is a typical example. If the strangulated loop could be transferred to the interior of the abdomen where it could be less easily identified, its symptomatology would be the same and its diagnosis less frequent. There are certain things which must be kept in mind: Strangulation of the large bowel is very rare; of the small bowel very common; if, in addition to pain, vomiting, localized tenderness and noisy borborygmi, there is a scar on the abdomen from a previous operation, then a diagnosis of small bowel strangulation becomes mandatory.

The most frequent mistake made in the assessment of an abdomen, acute or otherwise, is failure to look at it. There seems to be so much inherent eagerness to get the hands on the abdomen, that the far more revealing item of simple inspection is largely overlooked and undertaught. To sit down quietly beside the fully exposed abdomen and simply observe it in good oblique light, may be completely diagnostic in itself. Most medical students are taught to look for laddering, distention, signs of visible peristalsis and the commonplaces of diagnostic procedure, but only a small proportion are thoroughly familiar with the information to be obtained through simple auscultation.

Auscultation of the abdomen is probably the most neglected and potentially fruitful method of examination. A sound knowledge of the peristaltic sounds, which range midway between the boiling, writhing sounds which are audible across the room and the quiet stillness of paresis, is both helpful and rarely encountered. Sounds within the abdomen are usually discontinuous and the synchronization of pain with audible borborygmi is a sinister signpost. One sees it at its best, both visibly and audibly, in the intermittent projectile vomiting of hypertrophic pyloric obstruction or intussusception. Auscultation of the abdomen is a neglected though productive field.

It is the early case of strangulation obstruction that is urgent. There are no gradations to death and, once a bowel loop is dead, the urgency is by then for restitutional care rather than immediate resection. Fortunately, this is becoming increasingly well understood but should be constantly reiterated. Gone are the days of acute gastric dilation and the depletion resulting from the succorrhea pertaining thereto. The suction has changed all this, both before and after the operation. The need for constant assessment of fluid and electrolytic balance pertaining to its use is too well known to need comment.

The viability of strangulated loops is often held in question. The gloss, the return of colour are important but the ability of the loop to transmit a wave of peristalsis is conclusive regardless of colour. The dead loop is impassable. The

usual cause of strangulated loops is by a dense band, as in the inguinal hernia strangulation with the edge of the external oblique. The danger of gangrene in the loop may not be in the actual loop itself but at the linear pressure area only. Subsequent necrosis of the linear area may develop and a simple Lembert suture over such a suspicious area is simple, safe and swift insurance. The earlier the case of obstruction, the more urgent it is. The longer it has prevailed, the more deliberately should the prepared assault be undertaken.

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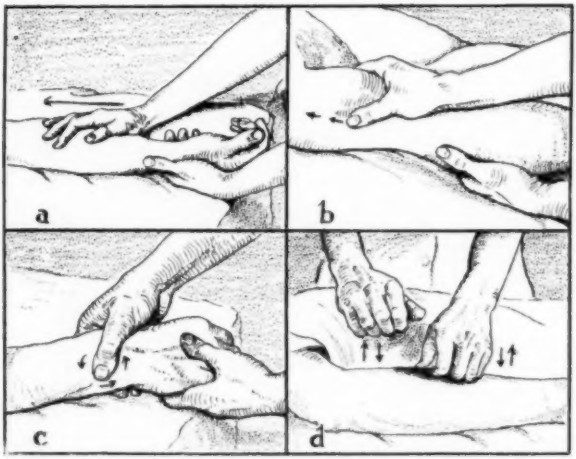
Conclusion

I have attempted to present a few highlights of a vast subject in a purely personal way and to re-emphasize my belief that surgery of the acute abdomen —and I hope surgery in general, is entering a more contemplative, less urgent era. The successful accomplishment of a difficult operation and an unmarred postoperative course is a source of great satisfaction to all concerned. I believe there would be a great many more such happy occasions, if a little more time were taken preoperatively, a little better timing permitted to the anatomical venture and a little deeper realization of the fact that the patient, too, is deeply interested in the outcome of your proposed intervention.

Clini-Clippings



Massage Movements

a. Effleurage or light stroking movements to the skin; b. Petrissage or deep movements over muscles which can be kneaded, rolled and squeezed; c. Friction or deep movements in which the skin is made to move over the underlying tissues; d. Tapotement or percussion movements in which the part is lightly and rapidly struck with the back or side of the hand and skin so as to permit free movements.

From Larkowski and Rusanova's "Hospital Staff and Office Manual."

The Nodular Goiter

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Recent studies have pointed out the increasing importance of the adenomatous or nodular goiter, particularly in respect to the malignant possibilities of such tumors, as well as the fact that definite toxic symptoms may be present without a rise in the basal metabolic rate.

It is difficult to explain the apathy of the medical profession in general toward these goiters in view of the well known facts about such lesions. This is particularly true of the nontoxic adenoma. Buckwalter and associates have reviewed the policies of many institutions in regard to their treatment of the nontoxic adenomas. A surprising number advocated expectant treatment.[1] However, the majority did recommend surgery in all cases of nodular goiter. Hinton and Lord[2] have compared the attitudes toward a lump in the breast and a lump or nodule in the thyroid. Although they are comparable in their malignant potentialities, no one would question the advisability of excision or biopsy of a breast tumor whereas some still "wait and see what happens" to the thyroid tumor. While waiting, many that are not carcinomatous turn malignant, because it has been shown that the thyroid is one place where benign tumors are definitely precancerous.

Incidence of Carcinoma in Nodular Goiters Strange as it may seem, carcinoma is found more often in the goiters with single nodules than in those with multiple nodules, and less in the toxic adenomas than in the nontoxic adenomas. Cole *et al.* found carcinoma in 24% of solitary nontoxic adenomas. 11% of the multinodular nontoxic goiters were malignant while only 1% of the toxic nodular goiters turned out to be carcinomatous.[3] In his series of 192 cases of nodular nontoxic goiters the total incidence of carcinoma was 17.1%. Cope *et al.* reported malignancy in 10% of all nodular goiters and 19% in those that had a single nodule.[5] Soley, Lindsay and Dailey reported 16% malignancy in their series of 96 patients with solitary nodules in the thyroid.[6] The average duration of the mass in patients with solitary carcinoma was 7.1 years according to Cole *et al.*[4] This would indicate that the lesions started as benign, and sometime in the interval became malignant. The size of the adenoma seems to be of no significance. Lahey has found carcinoma in a discreet adenoma the size of tip of the little finger. Age has little to do with the incidence of carcinoma in nodular goiter. Lahey reports a boy of 9 who died of carcinoma of the thyroid, and carcinoma in other children 12, 13, and 14 years of age.[7] Therefore, any palpable mass in the thyroid gland of a child should be suspected

of possessing malignant qualities regardless of how innocent the mass might appear. Pemberton and Black reported a series of 53 children operated upon at the Mayo Clinic for nodular goiter. Of this group 34% were malignant, which is considerably higher incidence than that reported for adults.[8]

Tumors arising in lateral aberrant thyroid tissue may be confused with nodular goiters. These may be of lateral, median, or ectopic origin. For every 500 goiters there is one case of lateral aberrant thyroid. Pathological examination of these tumors show cystadenoma with little differentiation into adult thyroid tissue. They are all considered either potentially or definitely malignant and should be treated by radical neck dissection and hemithyroidectomy followed by postoperative radiation.[9]

Symptoms and Diagnosis If the patient has nervousness, palpitation, loss of weight, increased appetite, an elevated metabolic rate, decreased blood cholesterol, etc., a diagnosis of toxic nodular goiter may be made. Many authorities have pointed out that the basal metabolic rate in itself is not an absolute criterion of the toxicity of a goiter.[1] Hertzler has stressed this point and cited his experience with patients on whom follow-up had been carried out for long periods of time and who eventually developed what he called "goiter heart", even though the basal metabolic rate was never elevated. These patients were greatly improved following thyroidectomy.[10]

When an adenoma of endocrine gland tissue exists, the tumor in many instances actually functions as secretory tissue. In adenomata of the islets of Langerhans we see hypoglycemia, and in the parathyroid adenomata one notices hypercalcemia. In the thyroid there has been some question whether ordinary adenomas cause symptoms, or whether they may exist without producing any manifestations of functional activity.[11] The question has been raised whether the nodular or paranodular goitrous tissue is responsible for the hyperthyroidism in the patient with the toxic nodular goiter. Some have questioned whether the nodules of a nodular goiter are even capable of functioning because large amounts of adenomatous tissue may be removed in the nontoxic goiter without producing appreciable change in the clinical thyroid function. Puppel, LeBlond, and Curtis[11] studied the behavior of nontoxic adenomas by the ingestion of radioactive iodine and found that all nodules showed a decreased function when compared to the function of the corresponding paranodular thyroid tissue. They further found that the paranodular thyroid tissue of a patient with toxic nodular goiter acted biochemically to a great extent like the diffuse hyperplastic tissue of exophthalmic goiter.

On the other hand, Cope, Rawson, and McArthur found the adenoma in a case of hyperthyroidism showed an avidity for iodine comparable to that found in untreated hyperplastic goiter with hyperthyroidism, while the uninvolved grossly atrophic tissue failed to take up any measurable quantity of radioactive iodine.[12]

Even if the nontoxic adenoma does not exhibit as much function as normal gland tissue, there is evidence of some function which is not normal. Other authors conclude that nodular goiters associated with basal metabolic rates, in normal and subnormal ranges, can, and often do, cause systemic symptoms. In most cases these symptoms disappear after removal of the goiter. Such symptoms as nervousness, easy fatigue, palpitation, shortness of breath, and vague gastrointestinal symptoms may be found in the so-called nontoxic goiters and are relieved in a large percentage of cases by thyroidectomy.[1]

Besides the symptoms of disordered function of the thyroid, nodular goiters produce other symptoms such as a sense of pressure in the neck, or actual choking. Sometimes there may be hoarseness due

to pressure on the recurrent laryngeal nerve. Cough and pain are sometimes reported. The intrathoracic or substernal adenomas may cause dysphagia as well as deviation of the larynx which is often associated with a raspy cough. There may develop dilatation of the superficial thoracic veins over the chest and engorgement of the neck veins which sometimes causes edema of the face. Barium swallow x-rays are of great help in the diagnosis of these tumors.[13]

Treatment Operation is the only rational treatment for nodular goiter whether it is toxic or nontoxic, not only because of the high incidence of malignancy in such tumors, but also because of other distressing symptoms due to pressure or disordered thyroid function. The general technic of thyroidectomy has been described elsewhere.[14] We are in agreement with Puppel, LeBlond and Curtis[11] that a bilateral subtotal thyroidectomy should be done on the usual case of toxic nodular goiter because in many of these the paranodular thyroid tissue is very hyperplastic. Simple enucleation of the nontoxic adenoma with perhaps a small margin of normal thyroid tissue has been found to be adequate in these cases. However, a careful search of both lobes must be made for smaller, less obvious tumors, which must be removed. If there is invasion through the capsule indicating malignancy, a total hemithyroidectomy or total thyroidectomy and block dissection of the involved side of the neck must be done which, if carcinoma is proven, is followed by x-ray therapy. Frozen section has proven to be misleading in some authors' hands[8] but has been helpful on occasion for us.

Although x-ray therapy may be a very helpful adjunct to treatment after operation in some cases of malignancy, certainly irradiation is to be condemned as the primary and definitive treatment of the nodular goiter, toxic or nontoxic. Besides the fact that adenomas do not respond to x-ray therapy, it is obvious that a case of malignancy may be temporarily put in abeyance to later flare up with an inoperable lesion while both patient and doctor are resting in a false sense of security.

The substernal or intrathoracic adenomas are best approached by the technic advocated by Lahey[13] in which anesthesia is given through a semi-flexible intratracheal tube and the inside of the tumor is broken up and suctioned out followed by delivery of the capsule. We prefer Gelfoam wet with thrombin for the cavity in the chest instead of gauze.

Lange and MacLean[8] state that patients with clinically palpable nodular goiters should be given thiouracil and similar compounds only as a preoperative measure. This is advised because, not only is there a high incidence of malignancy in such goiters, but also the question has been raised that such drugs may in themselves be carcinogens, or may enhance cancer susceptibility. Thiouracil and propylthiouracil are potent thyroid depressing agents which block the acinar cells of the thyroid, preventing the formation of thyroxin and indirectly liberating excess thyrothropic hormone from the anterior pituitary, causing marked thyroid hyperplasia. When its action is fully established there occurs a basophilia in the anterior pituitary similar to that which follows thyroidectomy.[17] Of the so-called antithyroid drugs propylthiouracil has the lowest incidence of complications and side effects, but it still should be used with discretion. Thiobarbital is the most toxic and should not be used.[20] Some advocate intravenous sodium iodide for the severe cases of thyrotoxicosis.[15] Tapazole is similar to propylthiouracil in its action but appears to be approximately ten to fifteen times as potent, requiring only 15 to 30 mg. as a daily dosage. Rash and urticaria have been reported in a few cases, and there is also a possibility of agranulocytosis, leukopenia and drug fever developing. Although promising, this drug as

well as some others have not been tried out over a long enough period as yet to get their true evaluation. Because there is no doubt that the antithyroid drugs have reduced the mortality in the severe cases of hyperthyroidism, on account of the fact the patients can be gotten into much better preoperative condition, we have used propylthiouracil in all cases where the basal metabolic rate is +40 or above. Lugol's solution is started at the same time as the propylthiouracil but no propylthiouracil is given one week before operation as advocated by Lahey.[16, 20] This has helped to avoid the vascular, friable gland at operation and also tends to avoid any agranulocytosis that might develop during the postoperative period. Lugol's solution alone is used for the milder cases of toxic nodular goiter. Sedation and other preoperative measures are the same as for primary hyperthyroidism.[14] Our patients are given Lugol's solution for three days postoperatively. The nontoxic cases are discharged from the hospital in 4 to 5 days, and the toxic cases discharged in 6 to 7 days. The convalescence is short and the mortality has been reduced to a very low figure, and is now practically nil, having been reduced over 100 per cent in the last 50 years.[18, 19]

Summary

1. Malignancy is found in as high as 24 per cent of solitary nontoxic adenomas of the thyroid gland, and in 11 per cent of multinodular nontoxic goiters. Toxic nodular goiters show a much lower incidence of malignancy.

2. The incidence of malignancy in the nodular goiters of children is even higher, being reported as 34 per cent.

3. Even the so-called nontoxic adenomas produce symptoms due to disordered function or toxicity not detected by an increase in the basal metabolic rate.

4. Propylthiouracil has been the choice of antithyroid drugs used in the preoperative preparation of the toxic adenomas when the basal metabolic rate is +40 or above. Lugol's solution is given with it from the first and the antithyroid drug is discontinued one week before surgery. Still this drug has potential dangers and should be used only as preoperative preparation and should be used with discretion in adenomatous goiters. Thiobarbital and thiouracil should be abandoned unless the patient can not tolerate iodine or propylthiouracil.

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Use of Heat In General Practice

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The use of physical agents in the treatment of disease and injury is older than the practice of medicine itself. These agents, including the use of water, heat, massage and exercise, have more often been used empirically with the thought that "they can do no harm, perhaps they will do some good." In view of advances in physics leading to the development of many new sources of heat, such a passive attitude as expressed above may contribute to the indiscreet application of mechanical, electrical and chemical devices in medical practice.

Nearly every physician in general practice uses a diathermy machine or heat lamp for sore muscles, or prescribes hot soaks for cellulitis. These physical methods are therefore in common clinical usage. Such adjuncts to the use of drugs, surgery, psychiatry and other armamentaria in medical practice should be approached with positive thinking and employed for the purpose of deriving the optimum physiological result. An informed physician will approach physical agents in therapy with the same discriminating concern that he prescribes a specific drug or recommends a particular operation. It is the purpose of this paper to stimulate our thinking regarding the rational application of one of these tools; namely, heat.

The clinician wishes to know if a particular machine or method is preferable in a given therapeutic situation. The question immediately follows, "what result is desired?" Does the aim of treatment call for relief of pain, relief of muscle spasm, improved peripheral circulation, increased joint range of motion, increased muscle strength, or reduced swelling? Whereas, massage will reduce edema, massage will not improve muscle strength. Whereas, exercise is necessary to improve range of motion of a joint, exercise is not generally indicated in an acutely inflamed joint. Whereas, heat frequently relieves painful muscles, heat alone will not restore muscle function. Further considerations, then, of the role of heat applied locally and generally to the body as a therapeutic agent will be discussed.

Local Heat When heat is applied to the body what physiological effects are derived? What various techniques at our disposal may be employed to give heat? Briefly, the principal physiological response to heat has long been recognized to be an erythema, or local vasodilation. Applied locally, as with a poultice to a boil, heat increases local circulation so that normal body defense mechanisms may be utilized more effectively in one area. Increased lymph flow[1] and transudation[2] accompany this local vasodilation. Depending upon the area of the body surface exposed, there may be also a significant rise of blood pressure and pulse rate.[3] Heat also relieves pain and muscle guard-

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ing around an injured or inflamed joint. With increased local temperature local metabolism and phagocytic activity of the leukocytes increases.

Types of local heat applications at our disposal include hot towels, hot water bottles, heating pads, whirlpool baths, short wave diathermy, radiant heat lamps, infra red burners, and so on. The effect produced by heat in any form is one of vasodilation and consequent acceleration of local metabolism. Although penetration of heat through tissue layers depends in part upon the wave length which in turn is dependent upon the capacity of the heating element, the devices available for home use are for practical purposes equally effective. The type of heat source chosen in office practice depends to a large part on the three C's: convenience, cost and congestion desired. It goes without further emphasis that no one physical agent is specific in the treatment of a particular lesion.

If it is desirable to improve local circulation in the presence of inflammation, pain or muscle guarding, it would seem more efficacious to apply moderate heat for short periods and at frequent intervals. Since heat imparted to local tissue is rapidly dissipated by circulating blood, the effects of any one period of heating are short lived. Therefore, applications of heat for fifteen to twenty minutes every two hours for a couple of days may give more rapid response than a thirty minute diathermy treatment once or three times a week. Considering the patient's early return to employment, and expense to society through compensation insurance and prolonged medical care during layoff, the use of heat treatments in the home as well as in the office for an intensive period may be economically more advantageous to the patient and doctor.

Whirlpool or wash basin imparts the same relief of pain in a sprained ankle or injured hand when the water temperature is maintained at 102 to 105 degrees F. for twenty to thirty minutes and repeated every two hours during the day. However, if one wishes to use a temperature of 110 degrees F. in a water bath for the purpose of treating an arthritic knee, it is more comfortable to start with a temperature of 104 degrees F., then raise to 110 degrees F. gradually.[4] Placing a limb in the bath at the higher temperature is usually accompanied with immediate painful withdrawal and vasoconstriction.

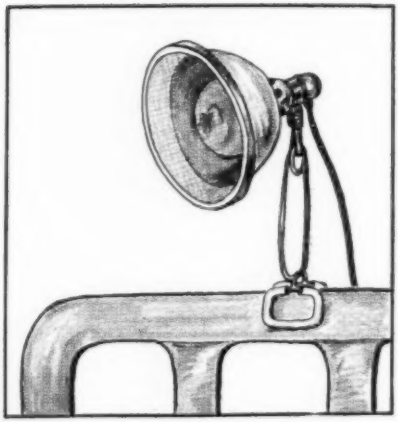


Fig. 1. Clamp Lamp.

A convenient source of radiant heat for supplemental home treatments when indicated, as in the case of a painful "frozen" shoulder, is any one of a number of 250 watt bulbs on the market. These may be placed in small reflectors which clamp to the back of chair or bed post. Some of these bulbs have reflectors built-in. At a distance of twenty-four to thirty inches from the skin for a period of about thirty minutes these lamps provide a very satisfactory source of heat (see Figure 1).

According to recent carefully controlled experiments by Krusen *et al.* it has been demonstrated that ultra short wave lengths as produced by the so-called Microwave Diathermy heat deeper layers of the

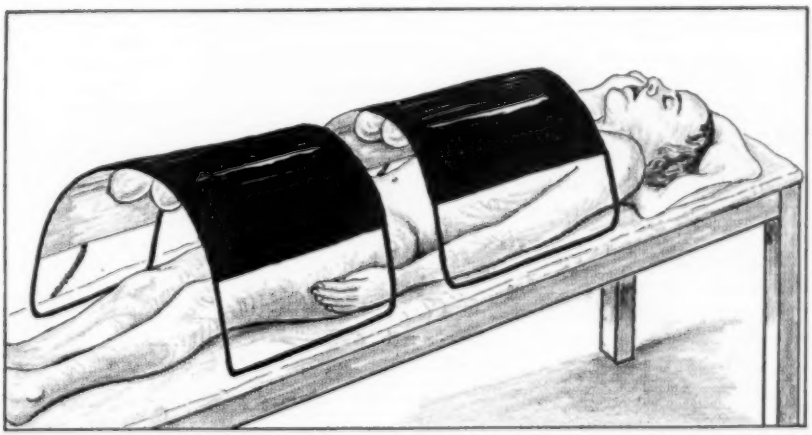
soft tissues;[5] whereas, infra red rays from the most efficient carborundum burner penetrate only a few millimeters into the skin. With the new, large "director U" attachment, Microwave Diathermy has wider application in low back pain and diffuse extremity lesions.[6]

There are some conditions in which increased local heat tends to aggravate rather than relieve pain. This is frequently true in acute bursitis, neuritis, and in other acute inflammatory conditions. The effect is apparently due to stimulation of nerve endings of pain fibers resulting from rapid stretching of skin, synovial membrane, periosteum, or neurilemma. Additional congestion through use of heat in the early stages of bursitis is therefore not desirable. An ice pack will be more comfortable during the first twenty-four to forty-eight hours, after which the use of heat will be tolerated and indicated.

Another mode of heating recently advocated is ultra-sound. However, until the current research on ultra-sound has been more thoroughly evaluated as to dosage and application in therapy, its general use is contraindicated. It has been shown that massive doses of high frequency sound waves can produce bony necrosis and destruction of nervous tissue.[7]

As there may be physiological indications for local heat therapy, there are also definite contraindications. These contraindications center on local pathology such as peripheral vascular disease and peripheral nerve lesions; but systemic conditions such as hematologic dyscrasias, cardiovascular diseases and spinal cord lesions should also be carefully evaluated before applying any form of heat. Heating is also avoided in areas of known or suspected disorders. Short wave diathermy over the low back or pelvis is avoided during pregnancy and profuse menstruation. Areas under which there are metallic implants, such as Smith-Peterson nail, should receive deep heating with considerable caution. A fracture site with good callus may decalcify upon repeated application of short wave diathermy. Infra red or diathermy over portions of the body covered by adhesive strapping may cause serious burns.[8] Likewise, extremes of temperature are not well tol-

Fig. 2. Double Bakers (cover both with blankets).



erated in infancy and in the aged due to irregular heat regulating mechanism and to reduced power of accommodation to external temperatures.[9]

In addition, local heat is frequently used as a preparatory step to and in combination with range of motion exercises to a joint, muscle strengthening exercises to a part, and functional occupational therapy designed to restore maximum use to the part of the body involved.

General Heating Although the average physician does not use general heating in his office, he may have occasion to determine whether general heating is indicated.

Raising the body temperature in a heat cabinet in cases of rheumatoid arthritis is still useful in some instances. Double bakers, one over the trunk and one over the legs, as illustrated in Figure 2, covered with blankets to hold the heat within, serve as a cheap and practical heat cabinet for office or hospital. Hubbard tank or bath tub with temperature at 100 to 104 degrees F. can also increase body temperature. In both cases, it is usually desirable to create a one or two degree fever; therefore, during the thirty minute treatment period the patient's mouth temperature, pulse and respirations are recorded every five to ten minutes. When the desired fever has been attained the lights in the cabinets or the temperature of the water are adjusted to hold this fever for the remainder of the treatment period. Such general heating may be prescribed three times weekly for two or three weeks for an outpatient who may have acute or subacute joints and rather universally involved. In a hospital situation daily therapy may be given by alternating Hubbard tank therapy with the baking on successive days.

Hubbard tank therapy for relief of muscle spasm combined with non-weight bearing underwater exercises to maintain range of joint motion adds to the relief obtained from bed rest in the case of painful osteoarthritic joints of the back, hips and/or knees.

Hubbard tank or therapeutic pool treatments are invaluable in relieving back and hamstring muscle tightness and for beginning early active assistive and active exercise in cases of poliomyelitis.

The physician prescribing treatment as indicated above will observe precautions referable to the cardiovascular system, such as increased pulse rate, increased cardiac output and stroke volume, elevated blood pressure; and to the respiratory system, such as increased depth and rate of respirations. If an elderly patient's heart will not tolerate the consequences of general heating, or if fever will embarrass further the reduced vital capacity of a young poliomyelitis quadriplegic with intercostal paralysis, then general heating is contraindicated. However, judicious application of these tools under controlled conditions is sometimes indispensable.

The rationale for general heating by these artificial means is in the mobilization of normal physiologic defense mechanisms for combating disease through increased metabolism, increased circulation, increased numbers and activity of leukocytes.[10]

Summary

Commonsense application of heat, representing one physical agent, has been discussed with a view toward obtaining physiologic results in the shortest possible time. Such a therapeutic tool is to the clinician who understands its use for treatment as a laboratory procedure is to the diagnostician who can interpret its significance for diagnosis.

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Chlorophyll Therapy In Pilonidal Cyst Wounds

In a series of over 100 cases, pilonidal cyst wounds healed "promptly and well" after postoperative application of Chloresium (chlorophyll) Ointment. Moreover, the foul odor often observed in pilonidal wounds was eliminated immediately by Chloresium Ointment and ". . . in this respect it is a boon to patient and physician alike."

B. J. Niemiro, writing in the September 1951 issue of *Lancet*, reported that initial operative procedures performed on these patients included (1) mid-line incision and suture of skin edges to the sacrococcygeal fascia, (2) primary closure, (3) exteriorization, (4) block dissection, and (5) simple incisions of the cyst and its sinus tracts.

Chloresium Ointment was then applied directly to the wounds with a wooden tongue depressor and covered with gauze squares, about one inch in thickness, kept in place by adhesive tape. Dressings were done every other day in this manner.

Five cases typical of the resistant condition in which Chloresium Ointment was effective are reported. Of these, four cases had not healed in more than twelve weeks postoperatively; one had not healed in four weeks. Following initiation of treatment with Chloresium Ointment four of these cases healed in two weeks or less. One case required 16 days for complete healing.

Chloresium Ointment "shortens the healing time on difficult lesions and is effective in the postoperative care of pilonidal cysts. In additoin to providing freedom from obnoxious odors which bother both patient and physician, the chlorophyll ointment facilitates identification of hidden sinus tracts through contrasts with the healthy tissue. Prolongation of treatment through neglect of pathological extension is thus more easily avoided."

A New Active Antithyroid Agent

Tapazole (1-methyl-2-mercaptoimidazole) was reported by Bartels and Sjogren in *J. Clin. Endocrinol.* [*11*:1057 (1951)] to be an effective antithyroid agent. The dose suggested by the authors for primary hyperthyroidism was 20 to 30 mg. daily and for adenomatous goiters was 30 to 40 mg. of Tapazole. Clinically the drug was found to be about 10 times as active as propylthiouracil in the group of 100 patients studied. The incidence of reactions to the drug was 6 per cent as compared with 1.6 per cent with propylthiouracil. However, the reactions were not serious in any of the patients in whom they occurred and simple altering of the dose or giving an antihistamine made further treatment with Tapazole possible in half of those showing a reaction. Agranulocytosis was not observed in any of the original group of 100 patients treated but following completion of this study one case did develop, indicating that this new drug is not free from toxic potentialities.

The Community Cooperative Approach To Alcoholism

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Where an estimated four to five million people are involved, we can hardly consider a problem of such magnitude anything but extremely serious. It is not surprising, then, that alcoholism has been called the fourth largest public health problem in this country. That it is a tremendous public health problem has been amply demonstrated.

That this problem touches every aspect of our American life cannot be denied, for directly or indirectly, all of us are affected. It behooves all of us, therefore, to bring to bear upon this tremendous problem all of the agencies we can command to solve this far-reaching perplexity.

If the strategists of our military intelligence were to locate within our lines a menace whose extermination was imperative, but which was well hidden, inaccessible, infiltrating, and dangerous, how would they go about it? I am sure they would employ every means at their command and after sufficient briefing in the habits, methods of operation, signs of recognition, etc., would send their agents out successively or all together to uncover the common enemy. I am also sure that if one of these agents were to discover the location and operation of this enemy, that single agency would not be empowered to combat the enemy alone, but rather would be required to report to the strategic heads, as would all of the other branches, so that an organized attack on the common enemy could be planned. This is not only good strategy for military purposes, but for any enemy which must be attacked.

What are the services we have which can be utilized in the pursuit of the enemy we call alcoholism? It is important that we recognize what it is we must contend with—the illness alcoholism, not alcohol. In our great effort to live in a free world, we must battle not the dictator who instigates the war, but the ideology of which he is the agent. Alcohol is the agent which brings about alcoholism, but the causes of the illness are not that simply defined. Discussion of this phase of the problem must remain for some future occasion.

However, we can outline methods whereby this illness can be defeated. In this respect, perhaps the most important of our frontline services is education. This covers a tremendous field, and it can be divided into the prophylactic, or preventive, and the therapeutic. The first properly belongs to the school system and in relationship to our problem should be directed by a local Committee for Education on Alcoholism.

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which should be affiliated with the state and national organizations. This Committee must be adequately supported by the community, both morally and financially, so that it can function properly, for in the proper education of our young people lies the eventual defeat of the enemy. And, of course, prevention is always better than cure.

The second, or therapeutic part of education can be divided into:

1. EDUCATION OF THE MEDICAL PROFESSION

a. The Medical Society. Here is the natural forum for education of physicians. Every local medical society should have its special Committee on the Problems of Alcohol. This Committee should prepare the programs and stimulate the interest. It should foster the scientific education and the possibilities of research within its local area.

b. The Hospital Staffs. Here important pioneer work must be done. At staff educational meetings, the various illnesses are always discussed. At least one session a year should be devoted to the illness of alcoholism. If the staffs of the general hospitals are properly oriented, the hospitals will admit as patients the alcoholics in the same way that they admit any other patients. There is an erroneous impression prevalent that the alcoholic is unruly, obstreperous, and difficult to handle. Actually, he is no more that than is the post-operative anesthetic case, or the occasional delirium that accompanies high fevers, or the occasional post-partum mental complication. If, on occasion, an acute alcoholic is somewhat disturbed, he can be controlled within a comparatively short time by the proper use of the remedies which we have at our command and the patient should be no more disturbing than any of those which I have mentioned. It is most important that the general hospitals accept alcoholics as sick people, and that they be given the care to which they are entitled, but this can be done only by the proper education of the medical staffs.

c. The Medical Schools. Here is the logical place to sow the seed for the future generation of physicians. It is sometimes difficult to change the thinking of some of the doctors who have been in the profession for a long time, for many of them have been exposed to the same attitude that the general public has maintained for many, many years—that the alcoholic is a moral renegade, and that his trouble is sin rather than illness. But when the illness of alcoholism is taught the young men coming through the medical schools, the same as other illnesses about which they learn, the attitude toward the alcoholic patient is greatly improved. The student is taught to accept the alcoholic as he does any of the other patients who come for help. Therefore, it is important that alcoholism as an illness be incorporated into the medical curriculum and that the medical student be sufficiently oriented regarding this disease so that when he becomes an intern, he accepts these patients in the hospital as he does the others.

2. EDUCATION OF NURSES

The proper attitude of the nurse toward the sick alcoholic is of extreme importance, and her understanding of the physiological defects and the psychiatric implications involved in alcoholism will be of great help when she is called upon to care for these patients. It is important that every training school include in its curriculum the subject of alcoholism as an illness.

3. EDUCATION OF THE CLERGY

These family counselors, who for many years have borne the brunt of guiding the alcoholic, already have a great knowledge of the spiritual side of the suffering endured by the patient and his family. They

have always been a great help in counseling the families of alcoholics, but I feel that the clergy also should have a greater understanding of the physiological and psychiatric implications involved in the alcoholic patient. It will help not only in the understanding of the sick person, but in their counseling as well.

4. EDUCATION OF INDUSTRY

As has been pointed out, industry has a great stake in the rehabilitation of the alcoholic. It has been estimated that one billion dollars a year is lost to industry through this illness. Half of that is due to lack of efficiency and loss of productivity due to drinking. The remainder comprises the money spent on the care of alcoholics and their families by private as well as public agencies, totaling about forty million dollars, and by reason of preventable accidents, which account for about a hundred and twenty-five million dollars, all due to excessive drinking. Custodial and institutional care add another twenty-five million dollars to that growing total. With proper education of industry, however, much of this could be saved. Where an industry has undertaken rehabilitation of its alcoholics and given them an opportunity to continue in their work, it has been proved that great benefit has redounded to both the individual and the industry which he serves.

5. EDUCATION OF THE PUBLIC

This, of course, covers a tremendous field, but it is very important that the general public be adequately instructed as to the possible causes and the necessary attitudes to be assumed toward alcoholism if progress is to be made. With the proper acceptance by the public of this illness as such, great strides will have been made in providing the eventual solution to this problem.

In addition to education, which covers so much of the field, come other agencies which are much help in meeting this problem. These might be listed as:

1. The Local Health Department. usually the county health department, which is always interested in all public health problems and is no less interested in alcoholism as one of them.

1. The State Health Department. I believe there are only about fourteen states which have a sub-division on alcoholism in their state health programs. Some, like my own state of New York, do not have a department of alcoholism, but have delegated to the problem one of its deputy commissioners.

3 The Council of Social Agencies. This combination of social service units is of great help in our problem. Supported by Community Chest funds in our locality, they have been most helpful, not only by providing advice and assistance, but also by accepting our Committee on Education as one of its constituent subdivisions, with the result that the Community Chest allotted us sufficient funds to carry on our educational work.

4. The Mental Hygiene Department. This department is of tremendous value in supplying psychiatric help in the problem of alcoholism, where and when it is needed. The mental hospitals of the state also come under this department in most cases, and often it is necessary to utilize their facilities in the treatment of some of the intractable cases.

Last, but by no means least, comes the organization called **Alcoholics Anonymous.** I cannot say enough about this ubiquitous organization. Up to fifteen years ago, the treatment and care of alcoholics was left pretty much to the clergy and well-meaning friends. The poor victims, and by that I mean the alcoholic victims, were shouted at, condemned, criticised, pitied, and nagged, but they were rarely helped. However, fifteen or sixteen years ago, Alcoholics Anonymous was formed. They proved that these sick people can be rehabilitated, could recover and become

useful, respected citizens again. I have found them most co-operative and anxious to carry on with the medical profession in this work. I feel that every Committee should have on its roster at least one member of Alcoholics Anonymous, and wherever possible, they should be called upon for their co-operation and advice, both in the education of the public and in the care of the alcoholic patient himself. The philosophy of Alcoholics Anonymous I can recommend to anyone, alcoholic or not, for a richer and a fuller life. As for the alcoholic under a doctor's care, I consider membership in Alcoholics Anonymous the best of maintenance therapeutics, and the organization should form the backbone of any movement for solving the problem.

How are we to get all of these agencies to work together? Of course, as the various doctors and hospitals become educated to accepting alcoholics, many of the patients will be handled privately. However, as a public health project, the ideal program can be carried out best in the clinic. Such a clinic should be the epitome of teamwork and should include a medical department, a psychiatric department, a psychological department, and a department of social work, which should include the psychiatric social worker. Of course, a clerical staff is always necessary. The clinic should be affiliated with a medical school, a general hospital, and a state mental hospital, wherever those facilities are available. Personnel for these clinics must be recruited and properly trained.

The training of such personnel, however, represents a problem in itself, because the problem of alcoholism and its treatment is such a comparatively new subject that there are not many places equipped for this educational process. The Yale School of Alcohol Studies stands out as a pioneer in this project and attracts most of those interested to its school. Each clinic, however, as it progresses, tends to become its own teaching center for those who are interested in the problem of alcoholism, and therefore the establishment of such a clinic tends to perpetuate its existence and provide personnel for other like clinics as the finances for them are provided by a demanding public.

Depending upon the response to the educational program in a locality, the personnel required to start with could be a part-time internist and a part-time psychiatrist. For a beginning, these can maintain the framework of medical and psychiatric treatment of the alcoholic. Of course, a clerk-receptionist and stenographer are necessary, as is a social worker, in most cases. A psychiatric social worker is of great value when obtainable and can be utilized for maintenance therapy when a psychiatrist cannot devote sufficient time.

I might say here that it is necessary that the proper professional personnel be sufficiently compensated to attract competent as well as interested people, since we cannot hope to succeed with this particular problem unless there is an initial interest. As the patient intake increases, full-time or more part-time personnel may be required.

It is desirable that volunteer workers also be recruited, especially in the field of psychiatry. These men, usually from teaching institutions, are valuable as guides to the younger men of the staff and can carry out their educational program by attendance at staff conferences. At these conferences, attended by the heads of all the departments of the clinic, the various cases are discussed by all the members of the staff and the opinions of the branches represented on the staff are voiced. After consultation with the visiting psychiatrist or consultant, a therapeutic program can be mapped and followed by the member of the staff to whom the patient is assigned. Members of Alcoholics Anonymous should also be called upon by clinic staff personnel whenever possible and indicated.

Our experience in Buffalo might be of some value in projecting a plan. As I

present it to you here, I can compare it to giving you a completed jig-saw puzzle. Looking at the finished picture, it appears comparatively simple, but I assure you it was not so easy when fitting the pieces together.

Late in 1948, we received from the State Department of Mental Hygiene a sum of twenty thousand dollars, which was obtained through the Federal Mental Health Act. This allocation was for a six-month period. We started with one part-time internist-director combined and another part-time internist. For our psychiatric department, we recruited four part-time resident psychiatrists from the local county hospital. A psychiatric social worker and a social worker were also employed, as well as a receptionist and a clerk. After the initial six-month period had passed, the same Department of Mental Hygiene allocated to us thirty thousand dollars for the succeeding year's operation. Before that term was completed, however, the Department of Health took over the financing of our clinic and gave us a budget of fifty thousand dollars per year. This was augmented by a five thousand dollar allocation from the Department of Mental Hygiene for each twelve months of operation. With these sums, we employed an executive officer, two part-time internists totaling forty hours a week, and sufficient part-time psychiatrists to total forty hours a week. Psychiatric consultants were employed as indicated. In addition, there were two social workers engaged, one a psychiatric social worker, as well as a full-time psychologist and three clerks. The Community Chest, through the Council of Social Agencies, gave to our Committee on Education a twelve thousand dollar annual grant to carry on its work. This was a tremendous stimulant and this contribution by the community itself toward this tremendous problem of combating alcoholism, is what spurred the New York State Health Department into choosing Buffalo for the location of a pilot demonstration unit. It was a tribute to the great work of Dr. Milton G. Potter, who pioneered this project, and it provided a tremendous stimulus for all of us who were interested in the program.

The money allocated to us by the state was expended for personnel alone, except for a small amount devoted to telephone expense, stationery, and necessary office material. The rent, furnishings, etc., were provided by the Medical School at the University of Buffalo, gratis. Our initial clinic was located within the medical school building itself. This was done initially not only because it removed the stigma of an alcoholic clinic in a hospital which existed in the minds of many of our patients, but also because it gave to the public the idea which we were anxious to disseminate—that this was a pilot research project, as well as a treatment clinic, and the presence of the clinic within the medical school helped to convey this idea. For the last year and a half, we have gone on with that type of staff, although we are now located in a new building, part of the Chronic Disease Institute of the University of Buffalo Medical School.

In conclusion, when we consider the ideal community as the force which undertakes to solve the problem of alcoholism within its confines, I would like to spell out for you:

State Health Department
Ubiquitous Alcoholics Anonymous
County Medical Society
County Health Department
Education Committee
Social Agencies Council
State Mental Hospital
Family counsel or clergy
University Medical School
Large general hospitals

With such an all-inclusive group as this, if it can be applied to any program for the care and treatment of alcoholics, I am sure that in such endeavor we cannot help but be successful.

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Symptomatic Treatment of Headache —A New Agent

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One of the most common, if not the most common, symptoms which prompt a person to seek the aid of a physician is headache. It would probably be a difficult task to find an adult human being who has never had a headache at sometime or another. It is a known fact that the head is the most frequent site of discomfort and pain. The practically universal occurrence of headache often leads many people to suppose that little significance is attached to their attacks. At least we find this to be the case when the headaches are of a mild and transitory nature, or when they may occur only infrequently. It is usually only when the headache attacks become quite frequent or very severe that the person becomes more concerned and seeks the advice of a physician.

Too often we find cases in which not enough attention was given the patient with a headache problem. It is too easy to pass the complaint of headache off as a minor one and merely prescribe aspirin or a similar preparation. Most cases of this nature, in which no more thought is devoted to the problem, soon return within a short period of time still suffering from the same pain. If this occurs, the "easiest way out" is merely to prescribe a stronger analgesic. After a few failures of this nature, the most logical thing for the patient to do is to seek the advice of another physician.

These pitfalls can easily be avoided by taking a thorough history of each headache patient. If a complete history is not taken in a headache problem, one cannot hope to come up with the correct solution for if the correct diagnosis is not made, the proper treatment cannot be instituted; and without the proper treatment, the patient will not be relieved of his headache attacks.

Diagnosis and correction of the underlying pathological changes is the prime goal in the treatment of each headache patient, along with the desired symptomatic relief. Therefore, the headache should be treated both symptomatically and prophylactically.

Headache, of course, is not a disease, but merely a symptom of disease. Like all pain, headache is a warning or an indication that something is wrong, either within the organism or in the relationship of the organism to its environment. However, because of the fact that headache may result from such a wide variety of physical, environmental, or emotional causes, it is often quite difficult to realize the exact significance of this warning.

According to Wolff,[1] headache is basically classified as vascular headache and nonvascular headache. Under the vascular classification are such types of headache as: migraine, histaminic cephalgia, tension headache, temporal arteritis, hypertension,

myalgia, premenstrual headache, and subarachnoid hemorrhage. Under the nonvascular type of headache, some of the more common forms are such types as sinusitis, neuralgia, ocular headaches, cerebral tumors, traumatic head injuries, psychogenic, spinal puncture headaches, uremia, and toxic headaches.

During the past several years there has been much investigative work and research in the field of the vascular type of headache. This is especially true in the field of migraine and histaminic cephalgia. Horton presented a new preparation for the symptomatic relief of migraine and histaminic cephalgia called D. H. E.-45.[2] In 1948 Horton and Ryan[3] made the first publication on Cafergot, which also is useful in the symptomatic treatment of these two forms of headache. Other investigative work has been done in this respect on such products as Octin,[4] E. C. B-210,[5] and more recently this phase of treatment of migraine and histaminic cephalgia has been attacked by using rectal suppositories.[6, 7] All but one of these suppositories are rather unsuccessful. However, one, which is experimentally known as E. C. B. P.-163, seems to be the best preparation so far compounded to abort attacks of either migraine or histaminic cephalgia.[7]

While this extensive type of investigative work has taken place recently in the vascular phase of headache treatment, little or no work has taken place in the nonvascular form of headache. The most common types of nonvascular headache are, of course, the forms of sinusitis and various neuralgias. For these specific types of head pain, the most commonly prescribed preparations are acetylsalicylic acid (aspirin), Empirin, Empirin Compound, Empiral, Anacin, etc. Recently, a new preparation called Fiorinal has been compounded in tablet form and is being used in an investigative manner in cases of nonvascular headache. This preparation was brought out originally with the thought in mind that it would be useful in cases of tension headache. Basically, it was compounded for the field of nonvascular headache. The big fallacy here is that the tension type of headache is properly classified as a vascular type of headache. Therefore, it seems that this preparation could not be beneficial in cases of tension headache if it is fundamentally meant for nonvascular types of head pain.

Tension Headache It is generally agreed that tension headache belongs in the vascular group. Horton[3] applies the term tension headache to a commonly occurring type of head pain that is caused by heightened nervous tension and occurs immediately following such an episode. This type of headache belongs in the vascular group because the headache is not caused by the nervous tension per se, which gives rise to a state of hypertonicity, but by the hypotonicity (vasodilatation) which follows the hypertonicity (vasoconstriction). The pain may be localized or generalized, as any vessel or vessels may be the origin of the head pain.

It is quite common to find an element of tension in cases of migraine. In fact, I have stated previously that these cases of migraine should be more properly classified as migraine-tension headache.[6, 8] Nervous tension is frequently found to be present during and preceding the migraine attack and is one of the most common factors which can precipitate an attack.

The tension headache patient will usually give no specific hereditary factor in their history. The pain usually develops without any prodromal symptoms, but there is an underlying emotional disturbance present; and because of this, there is a need for the patient to learn to make an adjustment to this situation or to minimize its effects. The physical examination of the tension headache patient will generally reveal no organic basis for the headaches. The headache usually develops following or during a period of nervous

tension. A typical history of the tension headache patient shows the headache to come on at the end of an excessively hard working period. Quite often the pain will come on several hours after the patient has finished his work and has left his working problems behind him and is relaxing at home or even asleep. This is very confusing to the headache patient, but this again shows that the actual headache attack is due to the secondary state of hypotonicity which results from vascular fatigue and is not due to the state of hypertonicity which actually prevails during the period of nervous tension. The hypotonicity leads to dilatation of the cranial vessels with the result that the adjacent pain-sensitive areas are stimulated.

As for the general characteristics of the typical tension headache pain, it is usually found to spread over the entire head and quite frequently is most severe in the occipital area. The patient will frequently describe his pain as having a feeling of a "tight band around his head which seems to become increasingly tighter." The pain is of a throbbing nature and rather dull in character. The severity fo the attack is often seen to vary, and the attacks may be rather periodic and recurrent in nature. There are usually no gastrointestinal upsets associated with tension headache attacks, which in itself is a great deal different from the classical migraine type of headache in which we always see nausea and very frequently vomiting. The age incidence of the tension headache patient has a very wide range and is not an important factor. In general, the tension headache patient has a rather nervous type of personality and is very conscientious in his work and daily pattern of life. The basic factor which is important in the etiology of the tension headache problem is that the patient does not know how to relax and rest. This is the big important factor which has to be overcome, and unless the patient learns how to relax, the rest of the treatment given him will not be as successful as is desired.

In treating tension headache, the objective, as in all headache treatment, should be directed towards stopping the individual attacks (symptomatic) and also reducing the frequency of the attacks (prophylactic).[3, 8, 9] As for the prophylactic form of treatment, personality adjustment is most essential. Teaching the patient how to relax is a "must" in the prophylactic treatment of tension headache. Histamine has also been found to be of some benefit in these cases;[10,11] however, it does not help in all cases. The histamine in these cases is administered intravenously only. Reducing the frequency of attacks is a difficult problem and depends upon the discovery of the ultimate causes of the patient's emotional upsets. To do this, a consideration of the entire life situation of each individual patient must be taken into consideration, and each individual patient will differ as there is no distinct pattern. The patient's personality must be analyzed, as should be his environment, his surroundings, his ambitions, and his ability to handle these conditions.

As far as the symptomatic form of treatment of the tension headache patient is concerned, heat is often beneficial, especially in the form of wet heat. Mild sedatives are of benefit in some cases. A new preparation called E. C. B. P.-163 has also been found to help in some of these cases.[7] Analgesics have a limited use in these cases, but do not produce the desired results in most cases. In some cases, Cafergot has been found to be of some help, but it is not nearly so successful in the tension type of headache as it is in the migraine type.[12]

This brings us up to the use of the new preparation, Fiorinal, in cases of tension headache. Fiorinal* is composed of 50

*Thanks to Mr. Sidney H. Lane of the Sandoz Pharmaceutical Company for supplying this material for investigative research.

mg. of Sandoptal (isobutylallyl barbituric acid), 200 mg. of acetylsalicylic acid, 130 mg. of acetophenetidin, and 40 mg. of caffeine. It is manufactured in tablet form, uncoated.

Acetylsalicylic acid is an analgesic and antipyretic. It should not be over used, as it can produce such side effects as edema of the lips, tongue, eyelids, nose, or of the entire face. It may also produce an urticarial type of rash, vertigo, and nausea. Some individuals are, of course, more susceptible to these side effects than are others; and these side effects are usually attributed to an idiosyncrasy. Its average dosage is usually from .3 to 1 gm. (5-15 grains) for adults, depending upon the size of the individual, his condition, and general state.

Acetophenetidin is a valuable antipyretic and analgesic. Its average adult dosage varies, depending on the individual; and when combined with acetylsalicylic acid, it is usually in the neighborhood of 2 grains.

Caffeine is a nerve stimulant. It is also believed that caffeine is a central nervous system stimulant. Caffeine also can act as a diuretic and a cardiac stimulant.

Sandoptal (isobutylallyl barbituric acid) is a sedative of the barbital type, but differs from barbital in that both of the ethyl groups which are in barbital (pentobarbital) are replaced, one by an iso-butyl group and the other by an allyl group.

From this formula, we can see that it contains the same elements as Empirin Compound with the addition of the Sandoptal, which is a sedative. Also, it resembles the preparation Emporal, with the addition of caffeine.

Analgesics, as I have previously stated, have a limited use in tension headache patients. This I have found to be true in the case of Fiorinal also. This should be the expected result, for Fiorinal is merely an analgesic plus a sedative. It was found to be helpful in some cases and to be of no value whatsoever in other cases. This is true of all analgesics in their application to tension headache problems. It is true that Fiorinal was tried in only a limited number of cases which are reported in this paper. However, the results obtained with this agent are not too encouraging, as far as the tension headache problem is concerned. This is true also in the cases of migraine-tension headache, but this was more or less to be expected.

Myalgia of the Head Since this is a new preparation in the field of headache, it was decided to try it in other forms of head pain experimentally to see just what results might be encountered. It was given to several cases of myalgia of the head, but the results here again were not the least bit encouraging. In fact, as a group, the myalgia of the head patients received less benefit than any other group. This again was somewhat to be expected, since this condition is of a vascular nature; and, as the manufacturers of Fiorinal state, the preparation is meant for the nonvascular types of head pain. One case of temporal-mandibular-joint syndrome was given Fiorinal, but it failed to relieve the pain of the attack.

Acute Otitis Media Several cases of acute otitis media were given Fiorinal, and the results were more encouraging than in the cases of myalgia and tension type of headache. Since the pain of acute otitis media is the type which should be helped to various degrees by the analgesic group of drugs, the results obtained with Fiorinal should have been expected, as they are of a neuralgic type of disturbance.

Sinus Headache Fiorinal was also given to a larger series of sinus headache cases. This was done on an experimental basis, and the results obtained with Fiorinal in sinus headache attacks were very gratifying; and, by far, the most successful of all the various types of headache studied in this paper. The sinus condition in the majority of the cases presented in this paper followed an acute head cold

or upper respiratory condition and were of the acute sinusitis type. Sinus headache patients give a different type of history than patients suffering from migraine, myalgia, tension or histaminic cephalgia. The sinusitis type of head pain is the result of either toxemia or a change in the intrasinus pressure. The headache of a patient suffering with sinusitis may also manifest a neuralgic type of pain.

The typical symptoms of the sinusitis type of headache patient will usually present a patient with a purulent type of nasal discharge, either unilateral or bilateral, depending on the sinuses involved. There is also nasal congestion and edema, and the nasal mucous membrane is usually of an inflammatory nature. Depending upon the acuteness and the severity of the condition, there may be a temperature elevation, but it is usually of a mild nature. There will be positive x-ray findings in cases of sinusitis. The superficial soft tissue areas overlying the sinus or sinuses involved are often tender to touch in cases of sinusitis. The pain is fairly constant and dull in nature. So far as the treatment of sinusitis is concerned, it may be either medical or surgical, depending on the individual case. Medical treatment of shrinkage and suction, along with the proper antibiotics, is very helpful. Heat is also helpful in many cases. The analgesics are helpful in the symptomatic type of treatment of sinus headache patients.

The relief afforded patients suffering from the sinus type of head pain was very satisfactory when Fiorinal was used. The results obtained with Fiorinal in various types of head pain are presented in the accompanying table.

From the results shown in the table, we may conclude that Fiorinal is of no value in migraine or myalgia of the head and of very little value in cases of tension type of headache. Thus, it is definitely of no value in the vascular types of headache which are discussed in this paper.

Type of Head Pain	No. of Cases	# Excellent	## Good	### Poor
Migraine-Tension	11	0	3	8
Tension	12	2	3	7
Myalgia	8	0	1	7
Temporal-Mandibular Joint	1	0	0	1
Acute Otitis Media	10	5	2	3
Sinusitis, Acute	26	15	6	5
Total	**68**	**22**	**15**	**31**

\# Excellent—complete relief
\## Good—partial relief
\### Poor—no relief

Its use in cases of histaminic cephalgia was not investigated, as it is also a vascular type of headache; and because of the poor results obtained with the other forms of vascular headache, it was thought to be inadvisable to use it in histaminic cephalgia.

Also, from the results presented in the accompanying table, it may be concluded that Fiorinal is of benefit in the pain experienced in cases of nasal sinusitis and acute otitis media. Certainly, further work along these lines is justifiable. The results obtained in this paper are only of a preliminary nature, and a further study of the merits of Fiorinal in sinusitis head pain is needed. Since Fiorinal is an analgesic, we would expect it to be of benefit in these types of head pain because they are of a neuralgic nature; and analgesics are helpful in the neuralgia type of pain.

The principal difference between Fiorinal and other analgesics is that the sedative, Sandoptal, has been added and the caffeine, which is a stimulant, has not been discarded. The addition of this sedative is basically sound, as many investigators agree that a mild sedative will often constitute a valuable feature of the therapeutic approach to a headache problem. It is desired in all headache problems to quiet the excessive excitability of the central nervous system and the reflex irrita-

bility which are involved in the mechanisms by which certain types of headache can be precipitated. Sedatives will tend to diminish the involuntary tonic contractions of skeletal muscle. Caffeine, on the other hand, may increase these tonic contractions of skeletal muscle. Thus, the two preparations together will tend to balance the scale in this respect.

A sedative added to the analgesic, as we have in Fiorinal, will tend to decrease the hyperirritability which is so often present in headache problems, such as the neuralgic type found in sinusitis. Certainly, there is no reason why a mild sedative would be contraindicated in most of these cases. The average case of head pain, presuming that the pain is of severe enough character, is usually emotionally upset, at least to a slight degree. The sedative should act against this emotional upset, and thus aid in the treatment program. This should, therefore, be an advantage over most other analgesics which do not contain the sedative.

Just how valuable Fiorinal will prove to be in the headache field remains to be seen in the future, after further investigative research has been done. The results shown in this paper indicate that further research is justifiable, and that perhaps Fiorinal will be a helpful agent in the symptomatic treatment of the neuralgic types of head pain.

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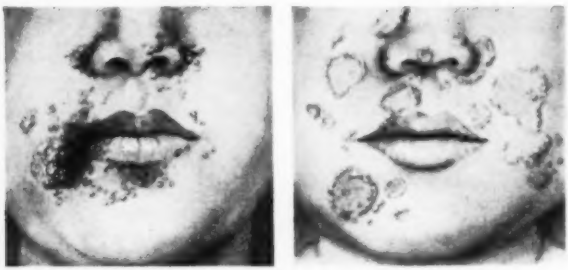
Clini-Clippings



Impetigo types—Illustrated on the left is the crusted type and on the right, the circinate type of impetigo.

From Larkowski and Rosanova's "Hospital Staff and Office Manual."

Rheumatic Disease

The Use of A Sodium Salicylate and Para-Aminobenzoic Acid Combination* in Various Types of Rheumatic Disease

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In recent years, the literature has been flooded with various types of treatment for rheumatic diseases. Gold treatment has been in use for two decades and still has its advocates for use in rheumatoid arthritis. Cortisone and ACTH have appeared more recently with glowing reports for treatment of rheumatoid arthritis and some cases of rheumatic fever. However, neither gold nor the adrenal nor pituitary type of medication produce permanent alleviation of symptoms. Relapses are the rule and all three types of therapy just mentioned are capable of toxic reactions, sometimes highly serious.

Untoward Reactions from Gold Therapy Rawls[1] states that toxic reactions may result from small doses of gold but their occurrence is less frequent and less severe than when large doses are employed. When large doses are used, toxic reactions occur in about 25 to 40 per cent of the patients and serious reactions in 3 to 5 per cent. Various mortality reports are cited. Hench found fatal results in 0.25 to 0.45 per cent. Cecil in 0.25 per cent (2 deaths in 800 cases). Ragen and Tyson in 0.44 per cent (2 cases out of 460) and Boots in 0.4 per cent (2 in 500).

Toxic reactions may be divided into cutaneous, mucous membrane, liver, kidney, hematologic, central nervous system, etc.

Of the more serious complications in the above list would be dermatitis exfoliativa, liver damage (which may result in death), kidney irritation (frequent urinalysis is advised), encephaltitis (rare but may be fatal), anemia, hemorrhagic purpura and agranulocytosis. A frequent complete blood count would definitely be indicated.

The relapse rate after the discontinuation of gold therapy is given by Ragan and Tyson[2] as 75 per cent in their three year study of 142 cases and Hench[3] states that chrysotherapy will cause striking improvement in only 10 to 15 per cent of cases of rheumatoid arthritis.

Bauer[4] states that studying the efficacy of gold therapy reveals that it cannot be regarded as a specific and constantly effective treatment for rheumatoid arthritis. It is more difficult to state whether gold is of some benefit to the patient with rheumatoid arthritis and whether its use is therefore justified in a patient failing to respond to conservative measures. A careful follow-up study of patients improving under gold therapy reveals a high percentage of relapses so the gain is slight.

* The combination is known as Encynex, manufactured by the Anglo-French Laboratories, 75 Varick St., New York, N. Y.

The toxic manifestations are unpredictable and at times irremediable.

Hyman[5] states "concerning this (gold therapy) we admit we have little enthusiasm and great fear."

Cortisone and ACTH While either of these hormonal extracts when used in certain rheumatic conditions, chiefly rheumatoid arthritis, brings about a temporary improvement, they do not cure the disease. Relapses are the rule when treatment is discontinued and untoward effects often of a serious nature frequently occur when the treatment has been continued over an extended period of time. The now often quoted opinion that ACTH and cortisone do not cure anything is probably correct according to Hench[6] of the Mayo Clinic. An editorial in the Journal of the American Medical Association[7] states that the extent to which the undesirable physiologic effects of these hormonal agents will limit their usefulness remains to be determined by future clinical investigation.

The Council on Pharmacy and Chemistry of the American Medical Association[8] states that the therapeutic dosages of cortisone depress the adrenal cortex. The negative nitrogen balance induced by cortisone high dosage may delay bone and wound healing. When cortisone is administered in the human being over extended periods, it may cause widespread physiologic and metabolic effects resembling those encountered in Cushing's syndrome. Although not all of the signs have been induced in any one patient, one or more of the following have been observed: rounded moon-like facial contours, hirsutism, acne, cervico-thoracic hump, muscular weakness, hypertension, osteoporosis, edema, amenorrhea, cutaneous striae, impairment of glucose tolerance, negative nitrogen balance, increased corticosteroid excretion, hypochloremic hypopotassemic alkalosis and mental disturances. Following the withdrawal of the hormone, symptoms (of arthritis) generally reappear within a short period, rarely longer than a few weeks. Continuation of therapy even on a reduced dosage schedule may lead to the development of a state resembling Cushing's syndrome.

The Council on Pharmacy and Chemistry elsewhere[9] gives the following contraindications for long term treatment with ACTH: hypertension, diabetes mellitus, mental disturbances, chronic nephritis, congestive heart failure, Cushing's syndrome and hirsutism.

Smyth[10] reported 3 cases of peptic ulcer made active by ACTH, one of whom died.

Habif, Hare and Glacer[11] reported perforation of a duodenal ulcer following ACTH.

King, Johnson, Batten and Henry[12] described a case of rapidly progressive pulmonary tuberculosis following cortisone therapy for rheumatoid arthritis.

A Bulletin of the National Tuberculosis Association [13] issued a warning against the use of cortisone and ACTH, not only in active tuberculosis but also in latent forms of that disease. Tucker[14] in a subsequent bulletin renewed the warning. Fred, Levin, Rivo and Barrett[15] reported a case receiving cortisone and ACTH who developed active tuberculosis.

Hoffer and Glaser[16] employed ACTH in a series of 15 patients. Significant changes in the electro-encephalogram occurred in 13 and psychiatric changes in 10, two of which were severe.

Rome and Braceland[17] reported 5 cases showing psychotic changes following cortisone or ACTH therapy. These ranged from catatonic schizophrenia or paranoid schizophrenia to various grades of manic depressive disease.

Freyberg and associates[18] state that just as they were pleased with the benefits of cortisone during its use, they were disappointed with the post-cortisone events. Relapses occurred in 83 per cent of patients including those with arthritis of less than 6 months duration, even after

treatments for as long as a year; severe "withdrawal symptoms," difficult post-cortisone readjustment to the worsened state of the arthritis—all these facts detract from the benefit of cortisone and diminish the enthusiasm initially held by the patient and physician for its prolonged use. There is no evidence that the course of the arthritis is ultimately altered favorably by prolonged cortisone therapy as they used it. They do not consider cortisone practical as a routine treatment for patients with rheumatoid arthritis nor do they consider it adequate treatment in itself. Whenever cortisone is employed, troublesome effects must be expected in some patients and the physician should be prepared to meet them.

The Use of Sodium Salicylate Combined With Para-Aminobenzoic Acid

Having seen the small percentage of permanent successes and the large number of recurrences plus the likelihood of severe and frequently dangerous reactions from either gold, cortisone or ACTH therapy, it is but logical to adopt a line of treatment that has proven successful in an increasingly large number of cases. I refer to salicylate therapy which has stood the test of time in all forms of rheumatic conditions and is still recognized as a specific in rheumatic fever. More particularly, I refer to a combination of sodium salicylate with para-aminobenzoic acid (which increases the salicylate blood level) plus acetophenetidin and sodium bicarbonate marketed under the name of Encynex. Its exact formula is as follows:

Sodium Salicylate	0.150
Para-aminobenzoic Acid	0.325
Acetophenetidin	0.150
Sodium Bicarbonate	0.060

The average dose is two tablets three times daily. Some of its advantages will be described later in this article.

Salicylate Therapy The use of salicylates in rheumatic fever as well as in chronic forms of arthritis has given a long history of successful results. In 1874, Buss[19] noted the effectiveness of salicylic acid in cases of "rheumatism." His report was followed by those of Stricker[20] and MacLagan[21], both in 1876. As Smith[22] states, "for almost ¾ of a century, indeed from the first writings of Stricker in 1876, the salicylates have remained the drugs of choice in the treatment of the arthritides. The preëminence of the salicylates is so well known and universally accepted that one does not need to prove the point by documentation, thought this could easily be done."

Dry, Butt and Scheifley[23] state that the dramatic relief afforded by the salicylates in the rheumatic affections made it difficult for many to retain the idea commonly held that it is connected largely with the analgesic and antipyretic action of the salicylates. A large body of data (Cohen[24]) has accumulated during the last few years which sheds light on the nature of the rheumatic processes and the influence of salicylates thereupon. It appears that the action of salicylates may be a rather specific one involving the inhibition or inactivation of the enzyme hyaluronidase, the so-called "spreading factor." It will be recalled that hyaluronidase, present in certain tissue cells and in many strains of hemolytic streptococci, has as one of its substances hyaluronic acid, present in relatively high concentrations in the skeletal tissues of mesenchymal origin; viz., connective tissue, fascia, muscle, ligament, joint capsule, synovial membrane, articular cartilage and even bone. The site of rheumatic lesions is in these tissues. However, it must be stated that while it appears that salicylates inhibit hyaluronidase, it has not been established definitely that a direct relationship exists between hyaluronic acid metabolism and rheumatic disease, although the evidence is suggestive.

Grollman[25] expresses a similar opinion to that of Cohen and states that rheu-

matic fever affects predominantly the mesenchymal structures whose principal substrate is hyaluronic acid. Salicylates inhibit the action of hyaluronidase which has the power of hydrolizing hyaluronic acid and it has been suggested that this is the mechanism by which the salicylates exert their beneficent effect in rheumatic fever.

Sollmann[26] states that to be effective in rheumatic fever, salicylates must attain a blood level of 25 mg. per 100 cc.

Reid[27] asserts that observations have been made on patients with rheumatic fever which suggest that in addition to the well-known relief of symptoms, adequate oral administration of sodium salicylate can really cure the disease. The return of the erythrocyte sedimentation test to normal was taken as the criterion of cure as being the best test at present available. Cure appears to depend on reaching and maintaining a high plasma salicylate level (between 30 and 40 mg. per 100 c.c.) while the disease is still active. Building up the plasma salicylate level to an adequate peak value is easy with oral administration of the drug but maintaining a high level is another matter for after the peak value has been reached, the level tends to fall in spite of continuous dosage.

Reid and associates[28] state that the effect of salicylates on acute rheumatic fever is so striking that if its exact mode of action were discovered, the nature of the disease might be inferred. The principal pharmacologic actions of the drug are stimulation of protein catabolism and aggravation of respiratory alkalosis. The higher the salicylate plasma level, the quicker the symptoms consisting of fever, tachycardia, joint pain and swelling are relieved. A fall in the erythrocyte sedimentation rate soon follows.

Jackson[29] informs us that only the salicylates have survived the test of time in the treatment of rheumatic fever. They have been in use for over half a century and opinions have varied as to the mode of action and the value of salicyl compounds. Most authorities agree that the free salicylates have analgesic and antipyretic action. Few, however, felt that salicylates modify the progress of the disease. Tremendous interest has been aroused therefore by Coburn's[30] report that by means of massive doses of salicylates, cardiac sequelae could be modified if a level of blood salicylic acid above 350 micrograms per c.c. (35 mg. per 100 c.c.) were obtained. According to this author, the failure of salicylate therapy in the past may have been due to inadequate dosage.

Goodman and Gilman[31] assert that the salicylates reduce the pain, immobility, swelling and inflammation of the joints in rheumatic fever and this constitutes a major therapeutic use of these drugs. So efficient are the salicylates in this respect that they have been employed as a therapeutic test in the differential diagnosis of arthritis.

Clark[30], in discussing the treatment of rheumatoid arthritis, refers briefly to treatment with cortisone and ACTH and states that the ultimate outcome in terms of treatment of the patient is not clear. He emphasizes bed rest early in the disease and simple and effective active exercises to assure the maximum use of the joints and the muscles around the joints. In regard to an analgesic, he states that the drug of choice for this purpose is some form of the salicylates. Salicylates are most helpful when used regularly in the maximum tolerated doses. Maintenance of an adequate salicylate intake makes it possible not only for the patient to be comfortable but also to exercise his joints more adequately. For this reason, salicylates are of value even in the absence of actual pain. Bed exercises can be performed 2 or 3 times daily and are carried out more comfortably and effectively when the patient is on full doses. Hot baths or hot packs are also frequently helpful.

Other forms of arthritis such as hypertrophic arthritis (osteoarthritis) also respond to the salicylates. In gout, Fine and Chace[32] have shown that the salicylates are more efficient than cinchophen in ridding the blood of excess uric acid. Other conditions helped by salicylates are subdeltoid bursitis, fibrositis and myositis.

Combination of Salicylates with Para-Aminobenzoic Acid The first valuable improvement in salicylate therapy came in 1946 with the demonstration by Dry and associates[23] that the addition of para-aminobenzoic acid to the rheumatic fever salicylate regimen markedly increased the concentration of salicylate in the blood level of this drug with an attending rapid remission of the signs and symptoms of the disease. These authors comment that Coburn[30] among others advocated the intravenous use of salicylates to ensure a high content in the blood—from 35 to 50 mg. per c.c. being desirable. Butt and associates[34] succeeded in obtaining this level by oral use but this is not always possible in straight salicylate therapy. Dry and associates[23] report a case wherein in spite of a liberal intake of salicylic acid (150 gr. daily) with an equal amount of sodium bicarbonate, it was not possible to obtain a blood level of over 12.5 to 15 mg. per c.c. When para-aminobenzoic acid 4.0 Gm. followed by 2.0 Gm. every 2 hours was added to the same dosage of salicylates, a steady increase in the blood salicylate occurred, reaching 34.5 mg. by the seventh day. It leveled off when the para-aminobenzoic acid was discontinued and climbed again when the para-aminobenzoic acid was re-administered. There was a dramatic and complete clinical response as the content of the salicylate reached 37.5 mg. Clinical improvement was accompanied by a marked drop in the sedimentation rate. The authors state that salicylates and para-aminobenzoic acid appear to have a reciprocal effect in increasing their concentration in the blood when they are administered together. The elevated blood salicylate level was shown to be related to a reduction in the rate of its urinary excretion. In turn, the salicylate increased the blood concentration of para-aminobenzoic acid. This latter fact is of importance since Rosenblum and Fraser[35] showed that para-aminobenzoic acid apparently is itself an active anti-rheumatic agent.

Smith[22] studied the effect of salicylates combined with para-aminobenzoic acid on 125 patients. Active rheumatoid arthritis was present in 35, osteoarthritis of the extremities in 35, osteoarthritis of the cervical spine with radicular pain in 15, primary fibrositis in 30 and chronically painful shoulders in 10. For the first week, sodium salicylate alone was given. Thereafter until the 21st day, sodium salicylate and para-aminobenzoic acid were given. Only 68 per cent had relief with 0.6 Gm. of sodium salicylate every 4 hours, while 92 per cent had relief with the same dose combined with para-aminobenzoic acid. The need for additional medicine was felt by 72 per cent on sodium salicylate alone and but by 2 per cent of those taking it in combination with para-aminobenzoic acid. Superiority of the combination was most striking in cases of rheumatoid arthristis or fibrositis. Toxic symptoms were noted in 55.2 per cent of patients taking the salicylate alone and in none taking the combination.

Hoagland[36] reported a case of rheumatic fever with refractoriness to 10.0 Gm. of aspirin daily manifested by uninterrupted fever for 5 weeks in which dramatic improvement followed the addition of 24.0 Gm. of para-aminobenzoic acid to the daily regimen.

The Use of Encynex Encynex tablets were developed by a group of research physicians and chemists after a year of intensive study. A substantial number of cases of rheumatoid arthritis was studied as well as a smaller number of cases of other types of rheumatic conditions. In

the series of rheumatoid arthritis, all complained of pain. Swelling occurred in all. Many had limitation of motion as measured by the arthrometer. Even with the relatively small dose of salicylates, a high blood level of salicylate was maintained and no untoward symptoms such as tinnitus aureum occurred. The high salicylate blood level was undoubtedly due to the synergistic action between the salicylate and para-aminobenzoic acid. The acetophenetidin exerted an additional analgesic action and the bicarbonate was added to prevent depletion of alkali reserves. Manchester[37] proves the necessity for such a step.

Regimen Followed Treatment by 2 Encynex tablets three times daily was given in a substantial number of cases of rheumatoid arthritis by the research physicians previously mentioned. Treatment was continued for from 6 to 12 weeks. Many with 75 per cent functional capacity were restored to 90 per cent and some with 90 per cent were restored to 100 per cent. In one series of 12 cases of rheumatoid arthritis, 75 per cent considered that their capacity for the requirements of their daily lives had returned to normal. While it is too early to claim any permanent results, recurrences are more widely spaced and are not a certainty as is the case with gold, cortisone or ACTH.

Other types of cases benefited by Encynex are rheumatic fever where considerable relief is obtained, osteoarthritis where analgesia occurs but joint restoration except in early cases is more difficult, if possible at all, and may require orthopedic surgery; muscular rheumatism, fibrositis and subdeltoid bursitis. No untoward results have been reported.

Conclusions

1. Encynex in moderate dosage gives all the advantages of high dosage salicylate therapy including a high blood level without untoward effects.

2. The benefits from Encynex are largely due to the synergistic effects of sodium salicylate and para-aminobenzoic acid. Additional analgesic effects are supplied by acetophenetidin and depletion of the alkali reserve is prevented by sodium bicarbonate.

3. Other forms of internal therapy used in rheumatoid arthritis such as oral cortisone as well as other forms of parenteral therapy such as cortisone, ACTH and gold have caused a long list of untoward effects, many of which are dangerous. These have been described in this article.

4. Particularly encouraging results have been found after using Encynex in rheumatoid arthritis in moderate dosage, with as many as 75 per cent of cases restored to normal activity.

5. Judicious exercises as well as physical therapy are useful when given simultaneously with Encynex.

6. The improvement in function produced by Encynex is long lasting and recurrences when they occur are more widely spaced and are not a certainty as is the case with cortisone, ACTH and gold.

7. Other indications where Encynex has proved its usefulness are rheumatic fever, fibrositis, osteoarthritis, subdeltoid bursitis and myositis.

8. No untoward results have ever been reported following the use of Encynex.

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145 West 71st Street

Crystalline Vitamin B12 and Sodium Folvite in Prematurity

Of 76 premature infants, weighing from 1 to 2 Kg., 52 were given vitamin B12 and/or sodium pteroylglutamate on various dosage schedules. The vitamin B12 was usually given in doses of 10 micrograms intramuscularly and the Folvite in doses of 3 mg. intramuscularly. A few were given the vitamin B12 in a single dose of 50 micrograms. The 24 remaining infants were observed as controls.

Mitchell, Etteldorf, Tuttle, and Clayton, writing in *Pediatrics* [*8*:821 (1951)], stated that the weight and length, hemoglobin concentrations, hematocrit, erythrocyte count, and reticulocyte count were measured at regular intervals until the body weight had reached 2.5 Kg. There was no evidence of any influence of either of these drugs on the measured factors during the first 50 days of life. The growth and development of the infants was on a par with that anticipated for premature infants. There was no evidence of influence on the utilization of iron.

Circumcision

OPERATION ON ADULTS

Circumcision on adults is performed usually to correct such disturbances as phimosis, paraphimosis, adherent prepuce, etc. If infection is present with these conditions, circumcision should not be performed but only a dorsal slit is made to relieve the constriction and thereby alleviate the pain.

Dorsal Slit To alleviate successfully the swelling and pain caused by constriction a dorsal slit, which cuts through the submucosal tissue and the subcutaneous band at the coronal junction, must be made.

The field of operation is cleansed, painted with an antiseptic solution and draped as described in the previous article on operations on infants.

The prepuce is anesthetized on the dorsal median line with 1%-2% procaine adrenalin 1:1,000. Fig. 1.

A small hemostat is clamped on each side of the median line at the edge of the mucocutaneous junction of the prepuce, then a grooved director lubricated with sterile petrolatum is slipped between the glans and prepuce. Sharp pointed scissors are inserted along the grooved director and the prepuce is divided up to $\frac{1}{4}$ inch from the coronal sulcus. The end point of the division is determined before

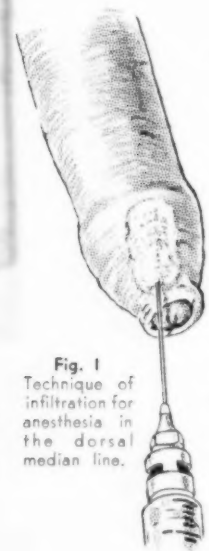


Fig. 1
Technique of infiltration for anesthesia in the dorsal median line.

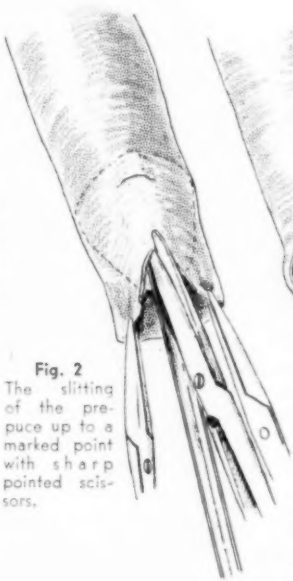


Fig. 2
The slitting of the prepuce up to a marked point with sharp pointed scissors.

Fig. 3
Retraction of prepuce for the examination of adequacy of incision and for cutting a small triangular flap at the end of the slit in the mucosa.

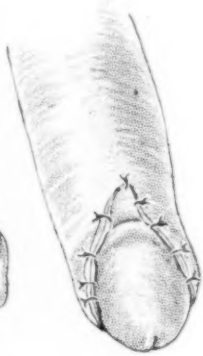


Fig. 4
Suturing of the slit. Note the suturing of the small triangular flap to prevent fusion.

traction is made upon the prepuce, otherwise the incision might be carried too far. Fig. 2.

The grooved director is removed and the prepuce is retracted to determine whether the incision is sufficient. Fig. 3.

All subcutaneous bands at the coronal junction are severed. The penis is bathed in warm sterile saline solution to control bleeding and the mucosa and skin at the edges of the slit are united with interrupted #00 chromic catgut sutures using atraumatic needles. Fig. 4.

A loose bandage is applied to the wound.

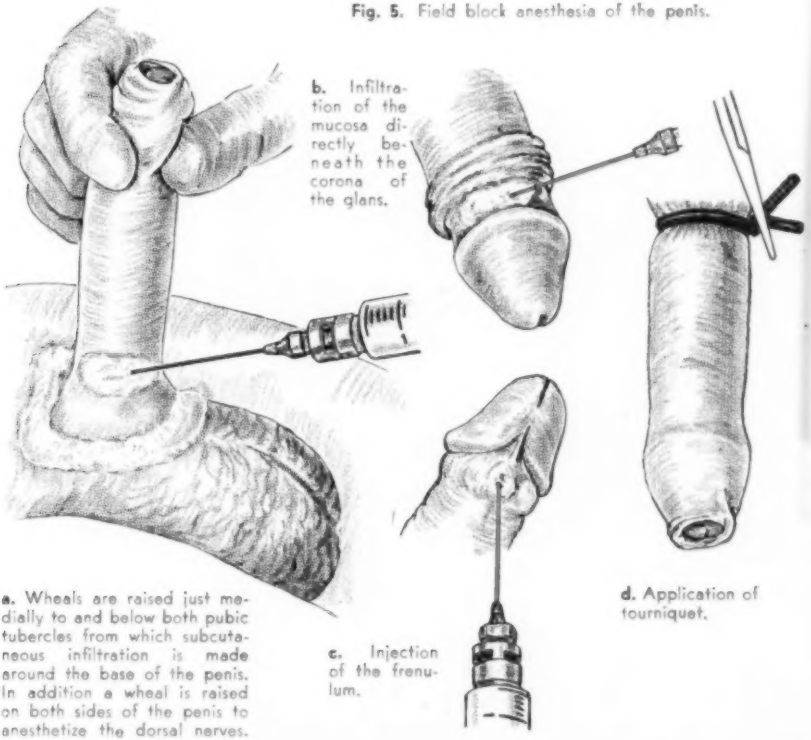
Circumcision with the dorsal slit method. The cleansing, disinfection and draping should be carried out as described above.

One per cent procaine adrenalin circular field block anesthesia is carried out to anesthetize the ilioinguinal nerves. Wheals are raised just medial to and below the pubic tubercles using a 2-inch long 26-gauge needle and a subcutaneous infiltration is made around the base of the penis using 5 cc. of the solution; then the prepuce is retracted and the mucosa is infiltrated directly behind the corona using 2 cc. of the solution. A few drops of the solution should be injected into the frenulum. Fig. 5. (a, b, c)

A tourniquet consisting of a rubber tube clamped with a hemostat is tightened at the base of the penis to prevent rapid absorption of the anesthetic. Fig. 5. (d)

The dorsal slit is carried out as described above and after the slit is com-

Fig. 5. Field block anesthesia of the penis.



b. Infiltration of the mucosa directly beneath the corona of the glans.

a. Wheals are raised just medially to and below both pubic tubercles from which subcutaneous infiltration is made around the base of the penis. In addition a wheal is raised on both sides of the penis to anesthetize the dorsal nerves.

c. Injection of the frenulum.

d. Application of tourniquet.

pleted the prepuce is cut off with curved scissors beginning on one side of the frenulum and proceeding downward and away from the frenulum, then extending circularly to meet with the dorsal incision. Fig. 6.

The same method is repeated on the other side of the frenulum, which leaves a V-shaped section on the posterior surface when the procedure is completed. Fig. 7.

The turniquet at the base of the penis is now removed and all bleeders are ligated with fine catgut. Special attention must be given to the ligation of the frenular arteries. Fig. 8.

To coapt the wound edges first a mattress suture is placed around the frenulum using #00 chromic catgut and atraumatic needle, then 5 or 6 mattress sutures are placed around the entire circumference to complete the wound closing. Fig. 9.

A simple vaseline dressing is applied firmly around the penis for the first 24 hours, but without pressure, otherwise edema of the penis will result.

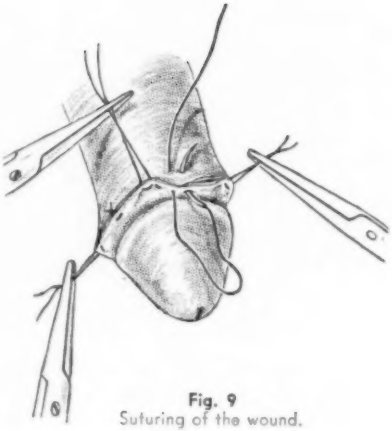
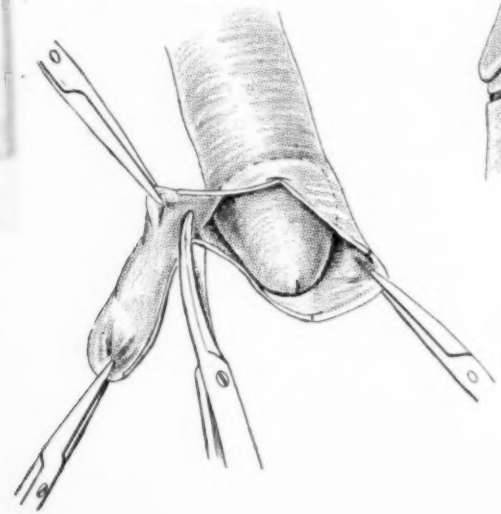


Fig. 9
Suturing of the wound.

To prevent erection 20 mg. Intravenous Premarin is given immediately after the operation followed by 17.5 mg. Premarin orally t. i. d. for the following two to three days. Instead of the Premarin tablets diethylstilbesterol tablets (1 mg. t.i.d.)

Fig. 6. The removal of one side of the prepuce with curved scissors.



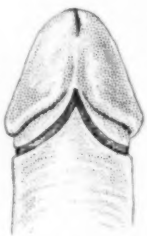


Fig. 7. The appearance of the penis after completion of the procedure described in Fig. 6, showing a V-shaped section of the stump of the prepuce at the frenulum.

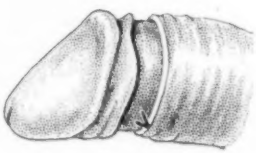


Fig. 8. The ligation of the arteries.

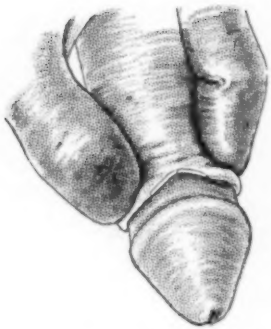


Fig. 10 (left)
The retraction of the slightly slit prepuce.

Fig. 11 (right)
The freeing of adhesions.

can be given.

Simple daily dressings are done and the sutures fall off on the 5th or 6th postoperative day.

The Gomco Clamp Method After preparing and anesthetizing the field of operation as described above a dorsal slit is made just long enough to allow the full retraction of the prepuce over the glans. If too long a slit is made the cone of the Gomco Clamp might slide off. Fig. 10.

Fig. 12
The adjusting of the vaseline lubricated cone of the Gomco Clamp over the glans at the level of the free end of the frenulum.

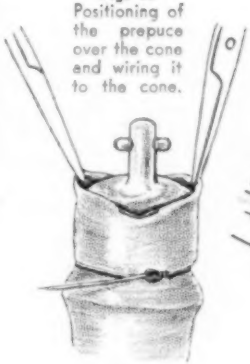


Fig. 13
Positioning of the prepuce over the cone and wiring it to the cone.

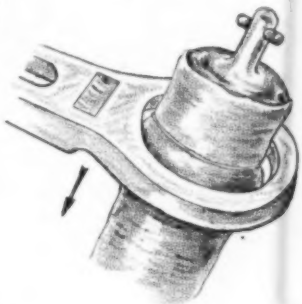


Fig. 14
The fitting of the base plate over stretched prepuce.

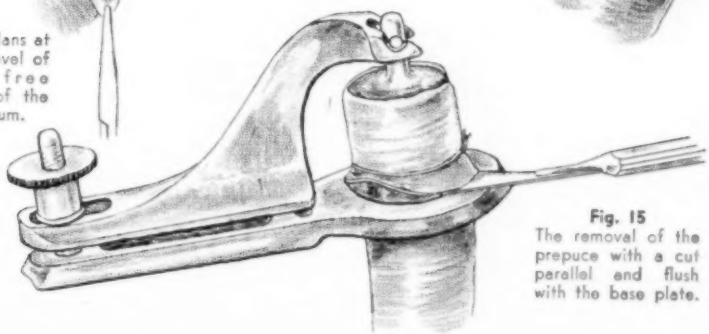


Fig. 15
The removal of the prepuce with a cut parallel and flush with the base plate.

Fig. 16
Vaseline gauze dressing of the penis.

All bleeding points are ligated and adhesions are freed as described in circumcision on infants. Fig. 11.

The vaseline lubricated cone of the Gomco Clamp is placed over the glans and adjusted so that the free end of the frenulum is on a level with the rim of the cone. Fig. 12.

After the cone is in position the prepuce is pulled over it with two hemostats clamped on the mucocutaneous border. The amount of prepuce which one intends to remove will be governed by the tension put on the prepuce. The prepuce is tied to the cone at the level of the cone's niche with a #25 gauge annealed copper wire, which is placed around the tissue and tightened. Fig. 13.

The hemostats are removed and the base plate is fitted over the stretched prepuce and the arms of the clamp are hooked under the prongs of the cone and the clamp is slipped into its notch on the base plate and screwed very tightly to crush the prepuce. Fig. 14.

The pressure is maintained for 7 minutes. After this time has elapsed the prepuce is cut off carefully so that it is absolutely flush with the base plate by holding the scalpel parallel to the surface of the base plate. Fig. 15.

After completion of the cut the clamp is removed. Temporarily the wound edges are coapted and there is no bleeding. The wound edges should be sutured to prevent separation of the temporarily fused mucosa and skin, as described above for the dorsal slit method. There are rarely any bleeding vessels which have to be ligated.

A simple vaseline dressing is placed over the wound. The dressing is changed daily. The sutures fall off the 5th or 6th day after which no dressing is necessary. Fig. 16.

For the prevention of erection the administration of estrogenic substances should be according to the instruction described above.

A limited quantity of reprints of this article is available to interested physicians and for teaching purposes. Address request to Editorial Research Department, Medical Times, 676 Northern Boulevard, Great Neck, New York.

EDITORIALS

The World Grows Smaller

According to Major Alexander P. de Seversky, aeronautical engineer, and some of his colleagues, the passage of the next fifty years will be marked by air carriers operated by atomic power, smaller and less complicated than bicycles, and able to put any individual on earth "within walking distance" of any other. "With the advent of atomic propulsion, the surfaces of the earth, wet or dry, may be largely discarded as roadbeds of transportation. Everything will move through the air, including individuals, since personal carriers will be even smaller and less complex than bicycles."

As we have suspected, the present age is still a kind of horse-and-buggy one, with automobiles crawling along at a distressingly slow rate.

Ex-Defense Mobilizer Charles E. Wilson says that he expects to live to see one-day round-trips become routine between New York and London. He reminds us that aircraft jet engines being developed today are almost ten times more powerful than America's first one. He expects to see the time "when I can have breakfast in New York, luncheon in London, and be back in New York in time for dinner."

American physicians in New Mexico and Nebraska must learn to look forward to staff duties in Calcutta and Cape Town. The New Yorker will administer nitrogen mustard for rheumatoid arthritis to a Russian Chief of State at 11 A.M. and keep a consultation date in New Haven at 4 P.M.

Changing Ratio of the Older Segments of the Population

The population at the older ages continues its upward climb: it is growing at a faster rate than the population at the main working ages; its expanding social and economic needs pose a serious problem for the country.

The statisticians of the Metropolitan Life Insurance Company note that one hundred years ago there were only about 6 persons at age 65 or older for each 100 of the population at 20 to 64. By 1900 the ratio had climbed to 8, and since then it has risen even more rapidly and is now 13, in other words double that of 1850.

This is a trend that we must carefully follow because of its far-reaching implications, among which the medical ones loom large.

The Alcohol Factor in Impotence

We are glad to see our best talents grappling in new and highly promising ways with the problem of alcoholism. And we are sure that our readers have found

extremely edifying the papers which we have published on this absorbing topic.

On the score of education, stressed by these authors, we think more emphasis should be placed upon the effect of alcoholism in diminishing and destroying the potency of men. It seems to us that impressing this fact upon the consciousness of drinkers would be the most highly effective of educational tactics.

Shakespeare understood this effect of alcoholism upon potency, at least in its short-term aspect:

"Lechery, sir, it provokes, and unprovokes; it provokes the desire, but it takes away the performance; therefore, much drink may be said to be an equivocator with lechery: it makes him, and it mars him; it sets him on, and it takes him off; it persuades him, and disheartens him; makes him stand to, and not stand to; in conclusion, equivocates him in a sleep, and, giving him the lie, leaves him" (*Macbeth* II, 3).

There should be further research upon the long-term aspect of alcoholism in relation to impotency. We suspect its influence to be very great. The wife of the confirmed alcoholic practically always testifies eloquently to such a devastative effect.

World Recovery Planning

We Americans do not always realize the healthfulness and high expectancy of life of our milieu as compared with that of many nations, but our public health experts possess a vision regarding this perilous discrepancy which enables them to see the whole world in proper perspective; it is their clear vision which makes possible the World Health Organization, which predicates that the health of each and every country is its concern, for all are interdependent in respect to health, if all are to be reasonably healthy.

Directed from Geneva, experts are working in Africa, Central and South America, Asia, and the Pacific and Mediterranean countries. Malaria and tuberculosis loom large in the program.

A healthy world—what greater goal can be conceived? A sick world is a world that will continue to wage war, to foster crime and subversion, to handicap childhood at all points.

Common Cold Conference

The Common Cold Foundation sponsored a conference on the common cold recently in Chicago, Illinois. This is probably the first common cold conference ever held in which men of industry, science and medicine discussed this complex disease. Dr. Thomas G. Ward, Associate Professor of Bacteriology at Johns Hopkins University, was guest speaker at the conference and his talk was followed by a panel discussion. More than fifty-five important industries in the Chicago area were represented by their medical directors, personnel, industrial and public relations officers, and industrial nurses.

The role of the common cold in economic loss to industry and business, the dangers of its complications, and the lack of continuous research on the common cold, which causes more disability than all other diseases combined, were emphasized.

The Common Cold Foundation is a nonprofit, free enterprise and is incorporated under the laws of the State of Illinois. Its purpose is to create and disburse funds for use in developing research and investigation to the end that the common cold and its complications may be more adequately controlled, minimized, or eliminated from our national life.

MEDICINE

MALFORD W. THEWLIS, M.D.*

Anorectal Complications of Aureomycin, Terramycin and Chloromycetin Therapy

S. D. Manheim *(New York State Journal of Medicine*, 51:2750, Dec. 1, 1951) reports 100 cases of an anorectal syndrome following the therapeutic use of aureomycin, terramycin or chloramphenicol, given by mouth. In those cases, the "symptom pattern" was much the same in all, and did not resemble the so-called idiopathic pruritus ani, or typical chronic anal fissures. The chief symptoms were perianal itching, pain, burning sensation and bleeding on defecation. Examination showed perianal erythema, excoriation and thickening of the perianal skin, and in some cases multiple superficial fissures. In a few cases there was an associated perianal abscess, or ulcerative proctitis or colitis. All these patients gave a history of taking aureomycin, terramycin or chloromycetin, or a combination of two of these antibiotics about two weeks before the onset of the anorectal symptoms. Most of these patients had had no pervious pathological condition in the anorectal region and those who had shown anorectal symptoms previously had an exacerbation of symptoms. While the exact dosage could not be determined in all cases, it was found that most of the patients with severe symptoms had taken relatively small amounts of the antibiotics employed. Aureomycin had been employed in the majority of cases, Chloromycetin in relatively few cases. In the majority of these cases, the antibiotic was given in the treatment of upper respiratory tract infections, in which the author considers them to be "of questionable value." The anorectal symptoms following the oral administration of these antibiotics is probably to be attributed to the resulting alteration in the intestinal bacterial flora, so that organisms resistant to the antibiotics are not inhibited and are the cause of the anorectal infections. On this basis, the local treatment of the anorectal lesions with ointments has recently been supplemented by the administration of acidophilus or buttermilk in order to restore the normal bacterial flora of the intestines, which has proved of definite value.

Thewlis

COMMENT

My impressions are that there is less reaction to chloromycetin than to the two other drugs. However, I seldom get a reaction from aureomycin and terramycin because I do not use as large doses as are recommended. Sometimes 50 mg. doses work as well as 250. Moreover, in mild infections 100 mg. twice a day or

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250 mg. once a day seem to keep the blood level sufficiently high to obtain good results. Even in chronic infections of the urinary tract I use 250 mg. daily for ten days out of the month for three months. Sometimes I think that the heavy doses of drugs are similar to using a sledge hammer for a fly swatter. Naturally in severe infections one uses heavy doses.

M.W.T.

Effectiveness of Smear Technique In Detection of Pulmonary and Gastric Cancer

H. S. Aijian and B. Browell (*California Medicine*, 75:416, Dec. 1951) report the use of the smear technique in the examination of 350 cases of pulmonary disease and 128 cases of gastric disease. In the pulmonary series both bronchial specimens obtained with the bronchoscope and sputa were examined in over 50 per cent, but in the remainder only bronchial specimens or putum specimens were examined. In this entire series of cases, the diagnosis of tumor was made clinically in 66 cases (51 pulmonary and 15 gastric), and the tumor was proven to be malignant in 49 cases, while the diagnosis was not proven at the time of this report in 17 cases. In the 66 cases, the tumor was "detected" by the smear technique in 59 cases, 75.8 per cent; the percentage of positive diagnoses by the smear technique was higher in the pulmonary group (80.4 per cent) than in the gastric group (60 per cent). There were apparently no "false positive" diagnoses in this series. A positive diagnosis of cancer was made on the basis of the presence of single malignant cells, rather than on cells in groups in most cases; however, groups of cells were observed in cases that later proved to be adenocarcinoma of both pulmonary and gastric origin. From the findings in this study and a review of reports by others, the authors conclude that the smear technique can be of special value in the diagnosis of pulmonary cancer; and that while it may not be of equal accuracy in the diagnosis of gastric cancer, it may be employed in cases of gastric disease, because of its simplicity and because of the fact that gastroscopy and x-ray examination do not always establish the diagnosis of malignancy, and a third test may be of aid.

COMMENT

Agree.

M.W.T.

The Mortality of Acute Myocardial Infarction in Private Practice

Samuel Baer and associates (*American Journal of Medical Sciences*, 222:500, November 1951) state that from 1934 to 1950, 1220 patients with acute myocardial infarction were admitted to the Jewish Hospital of Philadelphia; the annual mortality rate in this group varied from 21 per cent to 51 per cent, averaging 34 per cent. From their own experience in private practice, the authors considered this mortality rate of acute myocardial infarction to be higher than that observed in private patients. They made a study of the records of 182 patients seen in private practice in whom the diagnosis of acute myocardial infarction was established by one or more electrocardiograms in most instances; in 130 of these patients two or more electrocardiograms were made, which showed changes characteristic of acute myocardial infarction in all but 3 cases, in which diagnosis was based on the clinical characteristics alone. There were 135 males in this series (74 per cent), their average age being fifty-four years; in the 47 women in the series, the average age was sixty-one years. The sex, age and location of the infarction in these patients was similar to those of the hospital patients. There were 16 deaths in these 182 private cases, 11 in males and 5 in females in the first six weeks of their illness, a mortality of 8.5 per cent. In 5 of these fatal cases, the physician referring the patient questioned the diagnosis of myocardial infarction and the pa-

tient was not put to bed; in one, death was due to a cerebral accident, and in another, is attributed to a probable additional infarction; in the other 8 patients death occurred suddenly and unexpectedly. Thirty-five of these patients were hospitalized, usually because of unsatisfactory care at home, in a few cases for controlled dicoumarin therapy; only one of these patients died, probably because of another infarction. The comparatively low mortality rate of patients with acute myocardial infarction seen in private practice, in the authors' opinion, "casts doubt on the advisability of routine hospitalization and routine anticoagulant therapy" in acute myocardial infarction.

COMMENT

If a man can get peaceful treatment at home he may do well with myocardial infarction. The difficulty is that there is no peace in some homes until every member of the family is licked. In this case the man is too weak to assert himself. These patients as a rule do not react well to too much mauling. If the family is calm perhaps it is all right to treat the patient at home. It all depends upon the individual case. For myself, I should like as little mauling as possible; few tests; skillful neglect; not to be kept too clean; plenty of morphine; no visitors. If severely ill I would want anticoagulant therapy.

M.W.T.

The Effects of Combined Folic Acid and Liver Extract Therapy

R. B. Chodos and J. F. Ross *(Blood*, 6:1213, Dec. 1951) report that subacute combined degenerations of the spinal cord developed in 12 of 22 patients with pernicious anemia treated with folic acid alone for twelve to twenty-five months. When liver extract or vitamin B_{12} therapy was employed in addition to the folic acid, the neurologic symptoms did not progress in 10 patients who were in a state of good nutrition; but in 2 patients with poor nutrition and organic abnormalities the neurologic symptoms continued to progress in spite of liver extract therapy. These findings indicate that patients with pernicious anemia and other forms of macrocytic anemia associated with pathologic conditions in the gastrointestinal tract and poor nutrition have a deficiency of more than one substance, which the administration of folic acid alone will not correct. Therefore, if folic acid is employed in the treatment of such patients, supplemental liver extract or vitamin B_{12} should always be used.

COMMENT

I do not use folic acid except for the macrocytic anemia of pregnancy. Folic acid alone for pernicious anemia is not advisable because of spinal cord degeneration.

M.W.T.

Use of Rectal Suppositories in Treatment of Migraine Headaches

Milton L. Bankoff *(Journal of the Indiana State Medical Association*, 44:836, September, 1951) reports on an experimental suppository (EC 112), used for treating migraine headaches and other chronic vascular cephalgias over an eight month period. Forty-eight definitely diagnosed migraine patients were unable to obtain adequate relief from an oral ergotamine preparation. However, these patients responded satisfactorily to the parenteral form of ergotamine (Gynergen, DHE 45). The suppositories were preferred in all instances over the use of self-administered hypodermic injections. The underlying pathophysiology has been greatly clarified by recent publications. The vasomotor imbalance theory seems most popular. The mechanism, of the migraine attack proposed by the adherents of the vascular theory, is divided into 3 phases: a) Prodromal period—initial vasoconstriction of the cranial arteries produces visual and other preheadache phenomena. b) Headache phase—distention of cranial arteries which presumably causes the severe pain. c) Edema phase. The causes producing these vascular changes are not yet definitely established, but among them are listed psychologic,

allergic, and endocrine factors.

Test Group: 36 female, 12 male; age range 16-65; headache duration 2-55 years; 4 histamine cephalgia, 15 allergic, 19 migraine (idiopathic), 10 tension headaches. *Therapy*—E. C. 112 suppositories contain 2 mgm. ergotamine tartrate and 100 mgm. caffeine in a cocoa butter base (Sandoz). *Instructions*—1 suppository at onset of prodromal symptoms. Patients should lie down if possible or restrict activity. Second suppository in one hour if necessary. (No more than 2 per attack and no more than 4 per week). *Side Effects*—None. *Results of Medication*—26 patients (55 per cent) had complete relief of symptoms; 12 patients (25 per cent) had partial relief (severity and duration of symptoms markedly reduced); 10 patients (20 per cent) obtained little or no relief.

Advantages of Rectal Medication: 1) Added convenience—For patients who do not respond to oral tablets, suppositories are always available, since they are easy to carry. 2) Rapidity of action—in our series patients derived benefit within 30 minutes.

In treating migraine patients, psychotherapy must be included in the regimen. Ergotamine tartrate supplies only symptomatic relief. Diet, histamine desensitization, etc., are only useful in certain specific instances. The emotional problems and efforts towards readjustment of the patient's way of life must be constantly emphasized for successful migraine therapy. It is only by helping the patient understand his emotional reactions and attitudes can the physician hope to relieve the frequency and severity of the attacks.

Trial of a new rectal suppository (E. C. 112) containing 2 mgm. ergotamine tartrate and 100 mgm. caffeine in the treatment of vascular headache is reported. Eighty per cent of a group of 48 patients who had previously responded well to hypodermic Gynergen or DHE 45 reported good to excellent results with the use of rectal inserts at the onset of each attack over a trial period of eight months. (Author's Abstract.)

COMMENT

Sounds reasonable. Should be tried.

M.W.T.

Chloromycetin Therapy in Chronic Ulcerative Colitis

Z. T. Bercovitz *(Annals of Western Medicine and Surgery,* 5:991, Dec. 1951) reports the treatment of 24 cases of chronic ulcerative colitis with Chloromycetin. Stool cultures were made in 13 of these patients before treatment was begun and during treatment; it was found that Chloromycetin therapy resulted in marked diminution in *Esch. coli* and streptococci in the stool cultures within fourteen days after treatment was begun; after this time there was a tendency to reversal to the original flora. Of the 24 patients treated, 13, or 54 per cent, showed marked improvement, many becoming essentially normal symptomatically with normal bowel movements and no blood or mucus. Many of these patients maintained this improvement for long periods of time; if a relapse occurred, the symptoms were mild and responded promptly to another course of Chloromycetin therapy. Three other patients, 13 per cent, showed a moderate degree of improvement; and 8 patients, 33 per cent, showed "no essential change," although some noted a temporary favorable effect of the treatment. Three Gm. of Chloromycetin daily proved to be the most effective dosage, and no serious toxic effects were noted in any case. A longer period of observation is necessary, at least five years, before a final evaluation of the value of Chloromycetin in chronic ulcerative colitis can be made.

COMMENT

Good therapy.

M.W.T.

SURGERY

BERNARD J. FICARRA, M.D., F.I.C.S.*

An Appraisal of the Long-Term Results of Surgical Treatment of Regional Ileitis

J. H. Garlock and associates (*Gastroenterology*, 19:414, Nov. 1951) report a long-term follow-up of cases of regional ileitis operated on, and first reported in 1945. This series includes 57 cases in which ileocolostomy with exclusion was done; of these 10 have not been followed up. 36 were free from symptoms in 1945, and remain well; 6 had a recurrence before 1945; in 3 of these cases resection was done for the recurrence, and these patients are well at the time of this report; in 2 cases there was x-ray evidence of a recurrence in 1942, but these patients are free from symptoms in 1951; one patient still shows evidence of diffuse involvement of the small bowel, but is "reasonably comfortable." Five patients, free from recurrence in 1945, have since developed a recurrence; resection has been done in 2 of these patients and they are free from symptoms at the time of this report. In 1945, 45 cases of regional ileitis in which one-stage resection was done were reported; there were 6 postoperative deaths in this group. Of the 39 surviving patients, 17 have been lost to follow-up, including 3 who showed recurrences in 1945; 2 have died of intestinal obstruction (recurrence not proven); 3 showed recurrence in 1945, and of these 2 have died, and one had a second resection and now shows a second recurrence. Seventeen patients in this group remain well. In 1945, 16 cases were reported in which a two-stage resection was done; 2 of these patients died postoperatively; of the 14 patients surviving operation 1 has been lost to follow-up, 4 had a recurrence before the 1945 report; in one resection was done and the patient is now well; another patient is now well with negative x-ray findings without operation; in one a total colectomy has been done; one died after operation for the recurrence; 2 patients reported well in 1945 have since developed a recurrence, in one of whom resection has recently been done; 7 patients in this group who were well in 1945, are now well. In 1945, 19 cases of ileocolitis in which operation was done were reported, with 3 postoperative deaths; of the remaining 16 patients, 6 have been lost to follow-up; in 3 a recurrence was reported in 1945; one of these patients is now well after resection of the recurrence, and another after ileostomy; one patient has died; 4 patients reported well in 1945 have since died after a second operation, one with intestinal obstruction; 3 patients in this group, reported well in 1945, are still well. The authors note the fact that some of the late recurrences, as stated above, have shown spontaneous healing; it is difficult to explain this result, unless it is possible that the disease has "burnt itself out." Recently exten-

Ficarra

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sive resection of the small bowel for jejuno-ileitis have been done in patients not reported in this series with good results, patients gaining weight and showing "minimal" disturbance of bowel function, indicating that such extensive operations do not necessarily interfere with normal nutrition.

COMMENT

Regional Ileitis remains a difficult surgical problem even in the hands of those with great experience with this pathology. The recurrence of the disease is the major problem. The second problem is the management of these patients after extensive bowel resection. From the data presented in this study the eventual outlook for surgical cure is encouraging.

B.J.F.

The Individual Essential Amino Acids in Plasma and Urine of Surgical Patients

T. C. Everson and M. J. Fritschel *(Surgery,* 30:931, Dec. 1951) report the determination of ten individual essential (free) amino acids in the plasma of 25 surgical patients who were in a good state of nutrition and in 28 surgical patients with definite evidence of malnutrition. In the well nourished group there was no significant difference in the values of the individual amino acids as compared with normal values (as reported by Hier), except that histidine was lower than normal. In the malnourished group, the values for all the amino acids were definitely below normal, except for arginine. The three amino acids that showed the most constant reduction were isoleucine, histidine and lysine. Of the 38 malnourished patients, 18 had carcinoma, and the other 20 did not have carcinoma; values for leucine and isoleucine were definitely lower in the patients without carcinoma than in those with carcinoma. In patients with low blood albumin levels, the values for the amino acids showed only slight differences from those found in patients with normal blood albumin; this suggests that the decrease in essential free amino acids in the plasma may be an earlier sign of protein malnutrition than the blood albumin level. The authors also suggest that a determination of the plasma levels of the individual essential amino acids would be of value as indicating what amino acids should be used for reinforcing the diet in malnourished surgical patients.

COMMENT

The authors have called attention to alterations in the amino acids of the plasma in surgical patients. Their report is most worthy of study. Extensive and intensive research on protein will unfold startling physiopathological information. Perhaps at some future date, some investigator will reveal a method of accurately determining tissue destruction and/or growth by this method. An early cancer detection test perhaps may some day be based upon protein studies.

B.J.F.

Serum Cholinesterase Levels in Surgical Patients

H. E. Snyder and associates *(American Surgeon,* 17:959, Oct. 1951) report the determination of serum cholinesterase by the method described by Hall and Lucas, in 122 normal controls and 150 surgical patients with special reference to 53 patients who had biliary tract operations done. In this latter group of patients, the serum cholinesterase values both before and after operation varied with the extent of the disease and the operation done. In cases in which choledochostomy was done for stones in the common duct the serum cholinesterase values were significantly lower than in those in which choledochostomy was done and no stones were found in the common duct. In acute and subacute cholecystitis requiring cholescystectomy, the serum cholinesterase levels were lower than in those in which the operation was done for chronic cholescystitis. Higher serum cholinesterase levels were found after total gastrectomy than

after operations on the biliary tract. Both acute severe hemorrhage and prolonged or chronic bleeding were associated with lowered serum cholinesterase levels; adequate blood replacement and control of the bleeding resulted in a rise in the cholinesterase levels, which occurred more slowly in the chronic than in the acute cases. The serum cholinesterase and blood albumin levels proved to be "excellent indices" of liver function and the determination of cholinesterase was found to be a simple test that is of value in the management of patients undergoing major surgery.

COMMENT

This study is most interesting because it has shown that severe hemorrhage and chronic bleeding are associated with lowering of the cholinesterase levels. This may be an asset in the study of the various diseases of the blood and blood forming organs. In addition serum cholinesterase values have been found to be good indices of liver function. The authors should continue further studies on cholinesterase since this report has been very informative.

B.J.F.

Major Surgery in Hodgkin's Disease

R. D. Williams and associates *(Surgery, Gynecology and Obstetrics*, 93:636, Nov. 1951) report 31 cases of Hodgkin's disease in which one or more major surgical operations were done. In one of these cases, the operation was done for removal of localized Hodgkin's disease in the cervical lymph nodes (a radical neck dissection); this patient is living and well eight and a half years after operation without signs of recurrence. In 11 cases splenectomy was done because of hypersplenism with resulting thrombocytopenia, neutropenia or pancytopenia. In all but 2 of these patients the blood picture was greatly improved or returned to normal. There were no postoperative complications, and life was definitely prolonged. In 4 cases operation was done to relieve compression symptoms; in 3 of these cases laminectomy was done because of epidural lesions of the spinal cord; in the case in which the operation was done early, there was immediate improvement in neurological symptoms; when operation was done after symptoms had been present longer, improvement was delayed and less marked, but there was no further progression of symptoms. Operation may also be done to remove large masses of Hodgkin's tissue that are causing pain; this should be followed by x-ray therapy, and may result in symptomatic improvement. When Hodgkin's disease cannot be definitely diagnosed by biopsy of peripheral lymph nodes, exploratory thoracotomy or laparotomy may be done. Thoracotomy was done in 5 of the authors' cases, with removal of mediastinal masses in 2 cases; there was one death from cardiac arrest during operation. Laparotomy was done in 6 cases, in 4 of which there was a palpable abdominal mass; 2 of these patients, with liver involvement, died; the other 4 made a good postoperative recovery. In 7 cases operation was done for surgical conditions not related to Hodgkin's disease, such as acute appendicitis; one of these patients died following her third major operation; the others had no postoperative complications. In general patients with Hodgkin's disease in whom the disease is not generalized or "terminal" tolerate surgical procedures well, and even major surgical procedures do not "accelerate the course" of the disease.

COMMENT

In recent years many advancements have been made in the treatment of Hodgkin's disease. It is fitting, therefore, that surgical intervention should be a valuable aid in the therapy of this disease. The above authors have substantiated the value of surgery in the therapy of Hodgkin's disease. Their report should stimulate others to employ surgical measures in the treatment of this pathologic entity.

B.J.F.

The Cancer Detection Clinic

E. F. Cliffton and B. Rush, Jr. *(Sur-*

gery, Gynecology and Obstetrics, 93:719, Dec. 1951) report a follow-up study of 1000 patients seen at the New Haven Cancer Detection Clinic, between April 14, 1948 and September 16, 1949; follow-up was completed in 97.7 per cent. At this Clinic, an attempt is made to establish a final diagnosis, by biopsy if necessary, before the patient is sent to his physician for treatment. The majority of these 1000 patients, 60.6 per cent, applied to the Detection Clinic without being referred by a physician or clinic ("self-referred"); 25.2 per cent were referred by the Cancer Information Center and 14.2 per cent by physicians. If patients were referred as cases of proved or suspected cancer, and cancer was found, it was not considered as cancer "detection," unless it was unrelated to the lesion for which the patient was referred and was asymptomatic. In this series a diagnosis of cancer was made at the Clinic in 63 patients; 51 of these patients were referred by physicians because cancer was suspected; the cancer was detected at the Clinic in 12 instances. In 7 of these cases, there was no significant complaint, and the cancer was detected by careful physical examination and/or laboratory methods. Of the 977 patients followed up for a year or more 16 (1/7 per cent) developed malignant tumors proved pathologically; in 2 of these cases, symptoms developed within six months after the patient visited the Clinic and it was considered that the diagnosis was missed at the Clinic. Of the 12 patients in whom the diagnosis of carcinoma was made at the Clinic, 2 have died, one of whom refused treatment; in the other case (carcinoma of the lung) metastases were found at operation. The other 10 patients were treated promptly; in all the tumor was found to be localized and was radically removed, and all are living free from any signs of recurrence. It is noted that none of the patients who were asymptomatic but were found to have cancer refused operation.

Parotid Gland Tumors and Their Surgical Management

R. W. McNealy and J. W. McAllister (*Journal of the Michigan State Medical Society*, 50:398, April 1951) have found that prompt operation and excision (not enucleation) of the tumor are important factors in the treatment of tumors of the parotid gland. Roentgen-ray therapy is not indicated as parotid tumors are definitely radioresistant. Operation should not be delayed until a small tumor grows larger, as this increases the danger of recurrence; an apparently small tumor may have a larger tumor underlying it. In operations on parotid gland tumor, the authors prefer to use general anesthesia. The incision employed extends downward from the zygomatic arch, close to the pinna of the ear, to below and just behind the angle of the mandible, then turns "abruptly" to below the body of the mandible in one of the skin folds of the neck. The lateral flap is undermined to expose the posterior and inferior margins of the gland. The medial flap is then dissected free. If the tumor is small and situated in the superficial lobe of the gland—which is the site of origin of most parotid tumors, a superficial lobectomy will result in complete excision of the tumor. If a total lobectomy or a total removal of the parotid gland is necessary, ligation of the external carotid artery should be done. Permanent facial palsy will occur only if the main trunk of the seventh cranial nerve is cut proximal to the parotid isthmus; this can best be avoided by initial excision of the superficial lobe; if the course of the nerve is then not clear, resection of the mastoid process may be done. Some paresis, usually transitory, may result from division of some of the lesser branches of the nerve. As a rule, serious injury to the facial nerve can be avoided by careful technique, but preservation of the facial nerve is considered by the authors to be "secondary in importance" to complete excision of the tumor.

OPHTHALMOLOGY

RALPH I. LLOYD, M.D., F.A.C.S.*

Clinical Trial of Aureomycin in Trachoma

R. Naccache *(American Journal of Ophthalmology*, 34:1591, Nov. 1951) reports the use of aureomycin in the treatment of 35 cases of trachoma I, II and III, in an out-patient clinic at Beyrouth, Lebanon. Most of the patients came from South Lebanon, where the incidence of trachoma is high. Local application of aureomycin ointment was the only treatment used in 30 of these patients. There were 2 cases of trachoma II complicated by bilateral trachomatous corneal ulcers, and 3 cases complicated by bilateral pannus crassus; these 3 patients were all young women who were breast feeding their infants. Subjective improvement, with relief of photophobia, lacrimation and pain, was noted in two to seven days in all cases. The congestion was also much diminished. By the thirteenth day the follicles had disappeared in 2 cases of trachoma I. After the thirtieth day, there was still further slight improvement in cases of trachoma I and II; and the subjective and objective improvement observed earlier was maintained. By the sixtieth day, slit lamp examination showed pannus formation was still present except in the 2 cases noted above, which were considered to be clinically cured; the pannus, however, was less marked and often difficult to detect. In the 2 cases with corneal ulcers, the ulcers healed promptly. In the 3 cases with pannus crassus, the lesion was reduced to "normal pannus;" these 3 patients continued to breast feed their infants without any other treatment or improvement in diet. In 5 male patients, the aureomycin ointment was used for fifteen days; the subjective symptoms were relieved; but the "sago grains" persisted. A course of sulfathiazole treatment was then given for ten days; with this treatment very definite improvement was noted; the follicles were disappearing. The sulfathiazole was stopped and treatment with the aureomycin ointment resumed; by the sixtieth day these cases were "nearly cured," pannus being detected only by slit lamp examination. The author is of the opinion that the local application of aureomycin ointment is the best method for "mass treatment" of trachoma. It may effect a cure in cases of trachoma I and early trachoma II; for more severe cases of trachoma II, a sulfonamide should also be given by mouth. The best dosage of aureomycin ointment, whether 1, 2 or 5 mg. per Gm., has not yet been determined; with the various dosages employed no toxic effects have been observed.

Lloyd

COMMENT

Those who served in eye clinics thirty years ago could not believe that the day would come when trachoma could be controlled as it is today nor could they imagine that a report of this kind would have little interest in the United States. Only in the hospitals for American Indians and in some parts of the mountainous South are trachoma cases seen today. This is a most valuable contribution to preventive medicine in the Mediterranean especially.

R.I.L.

* Consulting Ophthalmologist, Cumberland, Prospect Heights, Brooklyn Eye and Ear, Long Island College and Peck Memorial Hospitals, Brooklyn.

The Effect of Local Cortisone in the Treatment of Syphilitic Interstitial Keratitis

G. W. Crane, Jr. and S. D. McPherson, Jr. (*American Journal of Syphilis, Gonorrhea and Venereal Diseases*, 35:525, Nov. 1951) report 11 patients with syphilitic interstitial keratitis due to congenital syphilis treated by local application of cortisone to the involved eyes. Eight of these patients had been given adequate antisyphilitic therapy with penicillin or heavy metals and 5 of these 8 patients had also had artificial fever therapy, but without any favorable effect on the keratitis. The other 3 patients were given adequate antisyphilitic therapy as well as the cortisone therapy. In the 11 patients, 17 eyes were involved; in 11 eyes the lesions were in the vascularization stage and in 6 eyes, in the infiltration stage. For the cortisone treatment, a 2.5 per cent solution of cortisone in isotonic sodium chloride, with a phosphate buffer and preservative added, was employed. One drop of this solution was instilled into the conjunctival cul-de-sac every two hours from 8:00 A.M. to 10:00 P.M.; two drops were instilled at 2 and at 4 A.M. The patient remained in the supine positon with the eyelids closed for half an hour after each instillation. Atropine and warm compresses were used in all but 2 cases. After ten days' treatment all but one of the patients were discharged from the hospital, without maintenance therapy, but were requested to report every two weeks, or earlier if the eye became inflamed or painful. In every case, photophobia, lacrimation and blepharospasm were relieved within four days. At the end of the ten days' treatment the progress of the keratitis had been controlled or arrested in 16 of the 17 eyes treated; in the 6 cases in which treatment was begun in the infiltration stage, vascularization did not occur. A recurrence developed in 8 of the 17 eyes; and in 2, there was a second recurrence. Cortisone was effective in controlling these recurrences. No adverse reaction to cortisone was observed in any of these cases.

COMMENT

Interstitial keratitis has been a problem for many years. No previous form of treatment has been consistently beneficial. The disease is not nearly so frequent as it was only a decade ago yet this treatment is most welcome.

R.I.L.

Anticoagulant Therapy in Occlusive Vascular Disease of the Retina

I. F. Duff and associates (*A. M. A. Archives of Opthalmology*, 46:601, Dec. 1951) report the use of anticoagulant therapy in 47 patients; most of the patients (26) had central retinal vein thrombosis. Heparin alone was used in 4 cases, heparin and bishydroxycoumarin, U. S. P. in 27 cases, and bishydroxycoumarin alone in the remainder. Heparin was given by intravenous administration in most cases, occasionally in a depository preparation; dosage was controlled by determination of the clotting time and heparin was used to prolong the clotting time to twice the pre-treatment level. When heparin was combined with bishydroxycoumarin, it was continued until the prothrombin was reduced to 20 to 30 per cent of the normal by the bishydroxycourmarin; the heparin was then discontinued, and the maintenance dose of bishydroxycourmarin was determined by the daily determination of prothryombin while the patients were in the hospital. After discharge the maintenance dose was continued with control tests every seven to ten days. In the 22 patients with central retinal vein thrombosis receiving bishydroxycourmarin, the average duration of treatment was three months; in 4 patients treated with heparin alone, the average duration of treatment was 6.7 days. Of the 26 patients with thrombosis of central retinal vein, 12, or 46 per cent, showed improvement of vision under treatment, 8 showed no change and 6 grew worse. Hemorrhagic glaucoma de-

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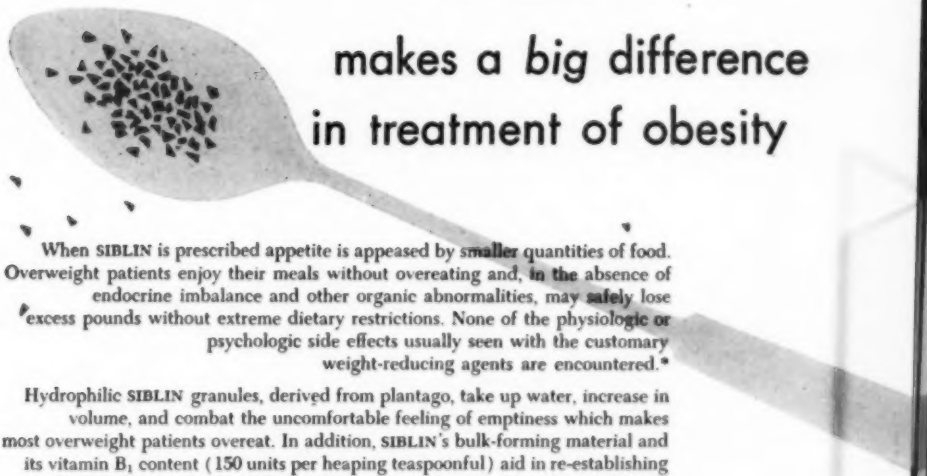

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*Jonas, A. D.: A Psychobiologic Approach to the Problem of Obesity. Am. Pract. 1:988, 1950.

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veloped in one case. In an additional 7 cases of thrombosis of a tributary retinal vein, 4 showed definite improvement in vision. The favorable results were obtained in those cases in which treatment was instituted promptly after the occurrence of the retinal vein thrombosis. Bleeding occurred in 13 of the 47 patients, in association with treatment with bishydroxycoumarin, and in 7 cases was so severe that treatment was discontinued; there was one death, probably due to cerebral hemorrhage, when the prothrombin level fell suddenly to 5 per cent. In a control series of 79 patients with complete occlusion of the central retinal vein, not treated with anticoagulants, the vision grew worse in 49 cases and a secondary glaucoma developed in 43 per cent, while only 15 per cent showed an improvement in vision. In the series reported intensive treatment with heparin alone for a short period produced as good results in retinal vein thrombosis as treatment with bishydroxycoumarin for a longer period, and because of the danger of hemorrhage with this drug, the authors are of the opinion that heparin treatment is the treatment of choice in retinal vein thrombosis. Further experience in the treatment of other types of vascular occlusive disease of the retina is necessary before anticoagulant therapy can be recommended for the treatment of these conditions.

COMMENT

This form of treatment is not without peril. Until thoroughly tried out, only in large clinics where close observation is maintained can it be used safely.

R.I.L.

Methods for the Early Diagnosis of Multiple Sclerosis

Otto Lowenstein (*A. M. A. Archives of Ophthalmology*, 46:513, Nov. 1951) describes special methods which he has found of value in the early diagnosis of multiple sclerosis. In cases in which some single ocular symptom, transitory diplopia or retrobulbar neuritis, suggests the possibility of multiple sclerosis, but the usual neurologic examination does not confirm the diagnosis, the use of certain special methods is described for the detection of paresis of low degree, latent tremor of the extremities or the head, and difference in muscle tonus of the extremities on the right and left sides, all of which signs are of significance in the early diagnosis of multiple sclerosis. In other cases, slight neurological signs suggestive of multiple sclerosis may be present, but the usual ophthalmologic examination does not confirm the diagnosis. In such cases latent nystagmus may be demonstrated by the patient's bending his head backward, or by suddenly flashing a light into the eyes in a darkened room. Of greater value are pupillographic studies which may reveal pupillary signs not found by ordinary methods of examination, and may show evidence of damage to individual neurons in the nerve pathways of the pupillary contraction to light. While it is usually considered that pupillary signs are uncommon in the early stage of multiple sclerosis, the author has found, by means of pupillographic studies, that they "very often" occur in early cases and are "almost always" present in advanced cases. Patients who have had two or more attacks of multiple sclerosis usually show ocular symptoms (including pupillary symptoms) in addition to general neurological symptoms.

COMMENT

Absence of reliable early signs of multiple sclerosis has been a great handicap in differentiating the form of retro-bulbar disease which is so often a part of multiple sclerosis from hereditary optic atrophy. Not infrequently sudden loss of vision is the first and only sign and an interval of three to five years passes before positive evidence of the real cause of the trouble appears. If time shows that the advice given above is reliable and reasonably practical in application, the doubt as to the etiology will be removed and, in the meanwhile, perhaps some form of effective treatment may be developed.

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MEDICAL BOOK NEWS

Surgery

Surgical Forum. Proceedings of the Forum Sessions Thirty-Sixth Clinical Congress of the American College of Surgeons, Boston, Massachusetts, October, 1950. Surgical Forum Committee: Owen H. Wangensteen, M.D., Chairman, Warren H. Cole, M.D. Robert E. Gross, M.D., Michael L. Mason, M.D., Carl A. Moyer, M.D. & I. S. Ravdin, M.D. Philadelphia, W. B. Saunders Co., [c. 1951]. 8vo. 665 pages, illustrated. Cloth, $10.00.

For the first time there is given, in a simple volume, all of the papers presented at the "Surgical Forum". This program, which has become one of the most popular features of the Clinical Congress of the American College of Surgeons, affords young surgeons engaged in research an opportunity to present ideas and investigative facts developed as the result of their studies.

All fields of surgery are covered in this volume. The papers are brief, with excellent tables, charts and photographs. Surgeons, young and old, will find this book a source of great information and scientific stimulation.

EDWARD P. DUNN

Pathologic Physiology

Allgemeine Pathologie. Pathologie Als Biologie und Als Beitrag Zur Lehre Vom Menschen. Ein Lehr- und Lesebuch Für Studenten, Arzte und Biologen. By Prof. Dr. Med. Franz Büchner. Berlin, Urban & Schwarzenberg, [c. 1950]. 4to. 528 pages, illustrated. Cloth, DM 32.80.

This certainly is one of the most fascinating books on Allgemeine Pathologie, although certain sentences are somewhat hard to read even for one who thinks that he has mastered the German language. The author describes and illustrates with excellent pictures that in health as well as in sickness there is never a standstill, lull, or inaction. Growth, shaping and metabolism are continuously taking place and subjected to the most delicate reactions and regulations resulting in the ever changing miracles of life. In certain chapters the author brings the historic developments of our current viewpoints with the varying and sometimes contradicting opinions of wellknown experts. The reader will find clear thinking and impressive deductions everywhere. The book is highly recommended for study and for reference.

MAX G. BERLINER

Psychiatry

Freud: Dictionary of Psychoanalysis. Edited by Nandor Fodor & Frank Gaynor. New York, Philosophical Library, [c. 1950]. 8vo. 208 pages. Cloth, $3.75.

This book has, in the reviewer's opinion, been long overdue, and he agrees with the prefacer that it will help to correct and clarify many of the misquotations of Freud, which have caused misunderstanding among specialists and laymen alike.

A simple key to references is available for the researcher who may desire to consult the definitions in their original context.

C. MILTON MEEKS

—Continued on following page

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Oral Surgery

Oral Rehabilitation. Complete Occlusal Reconstruction, Treatment of Dental Deformities and Related Subjects, the Closed Bite. By Jerome M. Schweitzer, D.D.S. St. Louis, C. V. Mosby Co., [c. 1951]. 8vo. 1,161 pages, illustrated. Cloth, $20.00.

The title of this book is a little misleading. The oral rehabilitation refers only to the treatment of deformities in relation to the reestablishment of the occlusial plane and function of the temporomandibular joint. The book brings together in an exhaustive study all the factors involved in the departures from normal of the human denture. It is well illustrated and is thoroughly documented with excellent references at the end of each chapter. This book will find a place as a good reference work for all students of the temporomandibular joint and the human occlusion.

LAWRENCE JOSEPH DUNN

Medicine

A Textbook of Medicine. Edited by Russell L. Cecil, M.D. & Robert F. Loeb, M.D. Associate Editors, Alexander B. Gutman, M.D., Walsh McDermott, M.D. & Harold G. Wolff, M.D. 8th Edition, Philadelphia, W. B. Saunders Co., [c. 1951]. 4to. 1,627 pages, illustrated. Cloth, $12.00.

This latest edition of Cecil's *Medicine* fully fulfills the stated purpose in the preface, to encompass in a single volume an authoritative discussion of those diseases which comprise Internal Medicine. The list of contributors is a generous sample of top-flight medical men in this country.

Of particular value are the theoretical and physiological discussions which introduce each new class of diseases, so as to give a sense of unity, of basic similarities between diseases formerly seeming so dissimilar. The short but interesting historical review of each disease adds flavor to the already rich material of the text.

It is impossible to close without mention of Dr. Fuller Albright's delightful and humorous preface to the Endocrine section.

JOHN M. VAN DER LINDE

Orthopedics

The Management of Fractures, Dislocations, and Sprains. By John Albert Key, M.D. & H. Earle Conwell, M.D. 5th Edition. St. Louis, C. V. Mosby Co., [c. 1951]. 4to. 1,232 pages, illustrated. Cloth, $16.00.

The new edition, *Fractures, Dislocations, and Sprains* by Key and Conwell has been enlarged.

The book is designed for the student. The text is well illustrated and comprehensive. On the subject of the union of fractures, the time is consistently incorrect. The healing time of fractures is not as short as from the four to ten weeks as stated. This should be changed in the next edition so that the student will have a better understanding of the long period of time it takes for fractures to heal.

A chapter on muscle re-education and exercises would be helpful.

OTHO C. HUDSON

Obstetrics

Clinical and Roentgenologic Evaluation of the Pelvis in Obstetrics. By Howard C. Moloy, M.D. Philadelphia, W. B. Saunders Co., [c. 1951]. 8vo. 119 pages, illustrated. Paper, $2.50 (American Monograph Series).

Dr. Moloy has written a most valuable monograph on the pelvis. It summarizes years of painstaking studies in x-ray pel-

—Concluded on page 328

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—Concluded from page 324

vimetry and correlates the size and shape of the pelvis with presentation of the fetus and mechanism of labor. Of particular value is the section on forceps operations in which, on the basis of the type of pelvis, the safest and most effective procedure is presented.

Though the publishers have produced the monograph inexpensively, the type is extremely legible and the illustrations clear.

ALEXANDER H. ROSENTHAL

Psychosomatic Gynecology

Psychosomatic Gynecology: Including Problems of Obstetrical Care. By William S. Kroger, M.D. & S. Charles Freed, M.D. Philadelphia, W. B. Saunders Co., [c. 1951]. 8vo. 503 pages. Cloth, $8.00.

In this monograph the voluminous literature on this subject, as represented by its lengthy bibliography, is gathered together and correlated. Though its authors admit that much of the material is controversial in nature, it nevertheless presents many theories which have gained widespread acceptance among psychiatrists and psychoanalysts and with which the obstetrician-gynecologist should be familiar. Despite its title, as much of the book is devoted to discussion of obstetrical as gynecologic problems. It is somewhat repetitious but well written in language that is easily understood by those who are not highly trained in psychiatry. Suggestions are given for practical application of the simpler of these methods and just when expert psychiatric assistance should be sought. More general use of hypnotism as a therapeutic measure is recommended.

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MODERN THERAPEUTICS

Stability of Vitamin A Concentrates

Vitamin A concentrates obtained by saponification of liver oils, by chromatography, by selective extraction, by molecular distillation, and those prepared from synthetic vitamin A or vitamin A palmitate were studied as to their stability to oxidation. The method employed was studied by Debodard *et al.* and reported in *J. Pharm. Pharmacol.* [*111*:631 (1951)]. The authors found that vitamin A alcohol was much less stable than vitamin A as the ester, both from natural sources. The synthetic forms exhibited low stability. Crystalline vitamin A acetate could be made fairly stable by the addition of antioxidants. The other low stability forms were not made appreciably more stable by the addition of various antioxidants. The most stable form was the natural vitamin A obtained by molecular distillation. This form was far superior to most of the other forms. The authors also concluded that the low stability of most of the forms of vitamin A, particularly the synthetic forms was not due to lack of antioxidants, but to the presence of some unknown substances that act as pro-oxidants.

The Use of Camoquin in the Treatment of Malaria

Villarejos and Victor reported the results of a 2 year study of the use of Camoquin (4-(7-chloro-4-quinolylamino)-α-diethylamino-o-cresol) in the treatment of malaria. They found that in doses of 10 mg. per Kg. of body weight the drug

is equally effective in arresting the clinical attacks of primary and relapsing vivax and falciparum malaria. In the majority of cases the circulating trophozoites disappeared within 24 hours. Multiple doses of the drug apparently killed the gametocytes of *P. falciparum*. According to the authors in *Am. J. Trop. Med.* [*31*:703 (1951)], the relapse rate from vivax infestations was reduced to a very low level. The authors also stated that the drug was nontoxic in the therapeutic amounts described and may even be given to patients with liver damage, kidney insufficiency, and cardial damage without ill effects.

Ascorbic Acid in Infant Feeding

It is known that the ascorbic acid content of milk is insufficient to meet the nutritional needs of nursing infants. The ascorbic acid content of orange juice is quite variable. Therefore, Holmes, Jones and Tripp enriched pasteurized milk with synthetic ascorbic acid to an average content of 84.8 mg. per liter and stored the enriched milk in a dark refrigerator at 10° C. for 96 hours. They found that the average vitamin C content after 24, 48, 72 and 96 hours was 77.1, 69.0, 62.3 and 55.1 mg. per liter, respectively.

The authors therefore concluded, in *J. Pediat.* [*39*:320 (1951)], that standard tablets should be added to the infant's nursing bottles in order to supply the daily requirements of ascorbic acid. They did not recommend that the vitamin be added to milk on a commercial scale because of the high loss that would occur during the time of transit from the processing plant to the consumer.

Dermal Absorption of Antihistamine Following Inunction With Perazil Cream

Amos E. Light and John A. Tornaben, writing in the September-October 1951 issue of *Annals of Allergy*, report that

—Continued on following page

MODERN THERAPEUTICS

—Continued from preceding page

experiments conducted on dogs have shown that small amounts ($< .04 - .27$ γ per ml. of plasma) of the antihistamine, chlorcyclizine hydrochloride, could be found in the blood plasma of dogs following daily inunction with 1% Perazil Cream on about 12% of the animals' surface area.

Detectable quantities persisted up to a week after inunction had been discontinued, showing the long action of this particular drug.

Maximal amounts found in the plasma after inunction were only approximately one-twentieth of the minimal quantities found when the animals exhibited toxic symptoms following oral administration of exceedingly large amounts, many times greater than the accepted therapeutic dosage range.

No pathological signs, either gross or histological, were observed in rats or dogs which had been inuncted with 1% chlorcyclizine hydrochloride cream for a period of 30 days.

Ascorbic Acid in Burn Therapy

The application of a 1 per cent solution of ascorbic acid in normal saline following cleansing of the burned area brought almost immediate alleviation of pain. In some cases a 2 per cent ascorbic acid ointment in a water-soluble base was applied. The 62 burns treated ranged from mild to severe and were caused by a number of agents. As a part of the general supportive treatment between 300 and

—Continued on page 74a

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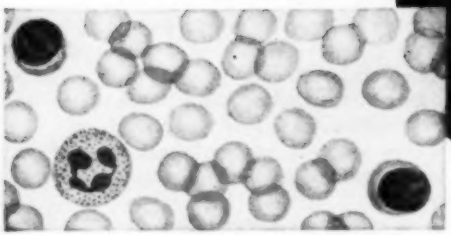

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1. Rath, M. M.: *Med. Times*, 79:617, Oct., 1951.

FERGON, TRADEMARK REG. U. S. & CANADA, BRAND OF FERROUS GLUCONATE

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2000 mg. of ascorbic acid was also given orally or parenterally.

Klasson found, according to a report in *N. Y. St. J. Med* [*51*:2388 (1951)], that no toxic effects appeared. He concluded that in mild burns ascorbic acid exerts a mild analgesic effect while in the severely burned it aids in combating the accumulation of toxic proteins and lessens the need for supportive therapy.

Aureomycin Packing and Dressing Successful in Clinical Trials

Case reports from 60 investigators have confirmed the advantages of Davis and Geck's new Aureomycin Dressing and Aureomycin Packing in a long list of indications.

Use of Aureomycin Dressing has shown rapid clearing of established infection and prevention of subsequent contamination in surface wounds. Particularly noteworthy has been the suppression of the growth of bacteria usually considered resistant, such for example, as saphrophytic organisms, with consequent elimination of the foul odor often characteristic of "dirty wounds." Reports show clearing and successful grafting of infected ulcers of many years' duration. In addition to the use of Aureomycin Dressing on burns of various types, superior results were noted in a large number of indications ranging from colostomies, indolent ulcers, abrasions and avulsions to use of the product as a routine dressing following various major and minor surgical procedures.

Aureomycin Packing has achieved similiarly outstanding results, for example, in infected abscesses and peritoneal sinuses which failed to respond to usual treatment. Decrease in morbidity and hospital time has resulted from rapid clearing of infec-

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MODERN THERAPEUTICS

—Continued from page 74a

tion by Aureomycin Packing in large abdominal wounds. With Aureomycin Packing, disappearance of purulent discharges and rapid healing of lesions that failed to respond to systemic antibiotic therapy have been reported. Rapid clearing of infection and elimination of the foul odor in malignant lesions have been noted also through use of Aureomycin Packing.

Masking of Pernicious Anemia by Multivitamin Preparations

The administration of multivitamin preparations containing small amounts of folic acid may mask the blood symptoms of anemia, according to Conley and Krevans in *New England J. Med.* [245:529 (1951)]. Five of 10 patients with pernicious anemia had no blood symptoms when diagnosed but only the neurologic manifestations of subacute combined degeneration. The absence of the symptoms of anemia could be attributed to the use of multivitamin preparations containing folic acid. Patients with pernicious anemia should be treated by intensive therapy with the parenteral administration of vitamin B_{12} or purified liver extract. Therefore, patients showing the neurologic manifestations of subacute combined degeneration should be regarded as having pernicious anemia even though the blood values are normal. The authors warned that multivitamin preparations containing folic acid should not be prescribed for patients whose symptoms might be caused by pernicious anemia.

Evaluation of Nitrogen Mustard in the Therapeutic Management of Hodgkin's Disease

The results of the treatment of 67 patients (Group I) with Hodgkin's Disease with HN2 (β, β'-dichloro-N-methyl-

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diethylamine) and roentgen therapy in alternating courses during 1946 to 1950 were compared with 65 patients (Group II) treated with roentgen therapy alone. HN2 was usually given in a dose of 0.2 mg. per Kg. per day for 2 days. Gellhorn and Collins writing in *Ann. Intern. Med.* [35:1250 (1951)] stated that the 4-year survival rate was 48.2 per cent for group I and 47.6 per cent for group II. On the average, group I received radiation therapy 3.6 days per month and group II, 7.4. The results obtained suggested that the amount of radiation required for group I was less, the asymptomatic period was greater and the economic burden was lighter than for those in group II. Objective and subjective remissions were obtained following 113 of 144 courses of HN2. Significant toxicity consisting of leukopenia of 1000 or less, thrombocytopenia of 70,000 or less, or hemorrhagic manifestations occurred after 9 courses. The authors stated that the coincidence of tuberculosis and Hodgkin's Disease constitutes a contraindication to nitrogen mustard therapy.

Utilization of Carotene

Growth was supported in vitamin A deficient rats when as little as 1.6 gamma of carotene was injected intramuscularly daily in the form of an aqueous preparation in which the carotene was made soluble with Tween 40. Carotene dissolved in cottonseed oil and injected was essentially not usable. Bieri and Sandman reported in *Proc. Soc. Exp. Biol. Med.* [77:617 (1951)] that 4 to 6 times as much carotene is required parenterally as is required orally, for maximum growth.

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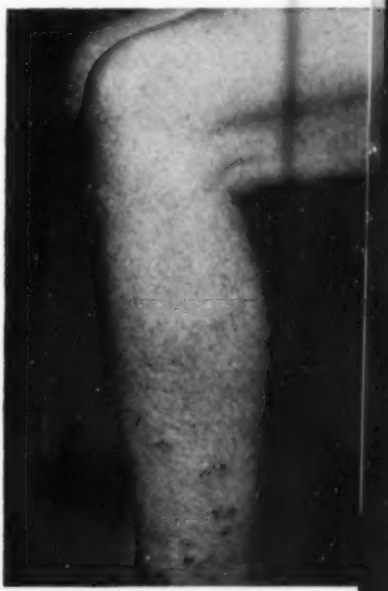

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NEWS AND NOTES

Knowledge of Human Nature Needed by Today's Physician

Today's physician needs an innate knowledge of human nature in addition to his medical knowledge to properly treat his patients, in the opinion of Dr. John C. Whitehorn, psychiatrist-in-chief of the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore.

Writing in the *Journal of the A.M.A.*, Dr. Whitehorn stated that medical practice has been greatly changed by triumphs over infectious disease through bacteriological study, sanitary engineering, chemotherapy and the antibiotic drugs—resulting in the lengthening of the life span. However, he added:

"Chronic disease and marginal conditions of persistent ill health now demand a larger share of medical attention and require from the physician greater understanding and skill in dealing with human nature.

"In the necessary task of aiding individual patients to adapt to stress, to modify their ways of living, and especially to resolve more effectively the internal emotional conflicts that spoil life for so many unfortunate persons, the modern physician needs something that traditional medical education and training have not provided.

"Psychiatry has found some answers and has developed some methods of studying human nature that offer possibilities for physicians to work out better solutions to some of these problems."

It is not necessary, however, for every

medical man to have special psychoanalytic training to size up properly the attitudes and emotional problems of his patients, Dr. Whitehorn stated.

An experienced physician with common sense and a certain practical knowledge of life can comprehend a patient's personal problems once the physician has gained an appreciation of the medical importance of motivation, and of the emotional problems and possible physiological disturbances involved in motivational conflicts, he said.

A considerable segment of the problems of chronic ill health is made up of frank mental and emotional disease—the psychoses and neuroses, according to the article. In addition, in a considerable proportion of cases, emotional maladjustments and bad habits of thinking and feeling definitely participate in the production of morbid tissue pathology — the so-called psychosomatic conditions.

Dr. Whitehorn pointed out that many illnesses, which are not in themselves psychotic, neurotic or psychosomatic, require for their proper management modifications in the pattern of life adjustment and modifications in patients' attitudes. This, he said, is a task of adaption that may strain the personality resources of many patients, or arouse definite and obstinate non-cooperation, the management of which requires of the doctor some psychiatric knowledge and skill.

Cortisone Found Successful in Relief of Asthma Attacks

Orally administered cortisone has been found successful for symptomatic relief of intractable bronchial asthma, according to an article in the *Journal of the American Medical Association.*

However, Dr. Emanuel Schwartz stressed, cortisone should be given only after all other treatment has failed to give relief. Only the elimination of the offending factor or factors and hyposensitization

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where elimination cannot be carried out will offer complete success, he said. Dr. Schwartz, an allergist, is associated with the Long Island College Hospital and the State University of New York Medical Center, New York.

Dr. Schwartz gave the results of a study of 22 patients suffering from intractable bronchial asthma who were treated with the drug. They ranged in age from five to 67 years; 12 were females and 10 males, and the duration of asthma varied from four months to 35 years.

Orally administered cortisone relieved the symptoms in 26 of the 31 courses of treatment given 22 patients, Dr. Schwartz reported. Five courses in five different patients had no beneficial effects; four of these five had emphysema. One patient died during treatment, but an autopsy showed no relationship between treatment and the cause of death.

Eighteen of the patients obtained relief within 5 to 12 hours, six in 24 hours, one in 48 hours and one in 72 hours, the report pointed out.

"There seemed to be an increase in the sense of well-being with most of the patients, and in several a sense of euphoria developed," Dr. Schwartz stated. "Several of the patients showed a marked increase in physical activity while taking cortisone. The increased physical activity was mainly due to symptomatic relief . . . As a rule the appetite was increased."

The symptoms of 18 (61 per cent) of the patients recurred within two weeks after cortisone was discontinued, according to the report; the longest period of remission was 210 days. Minor reactions to the drug disappeared upon reduction of the dosage.

"The results justify the use of orally administered cortisone for symptomatic relief in intractable bronchial asthma

after the usual therapeutic measures have failed," Dr. Schwartz concluded.

New Sulfone Drug Used To Treat Skin Disease

Diasone, one of the newer sulfone compounds, has been used successfully in the treatment of dermatitis herpetiformis, a fairly common, serious, chronic skin inflammation, it was reported in *Archives of Dermatology and Syphilology*.

Thirteen patients with the affliction improved decidedly or had complete remissions while taking the drug, according to Dr. Theodore Cornbleet, a Chicago dermatologist and professor of dermatology at the University of Illinois College of Medicine. Dr. Cornbleet stressed, however, that the drug was not a cure.

Until the advent of sulfa compounds and antibiotics, dermatitis herpetiformis was considered relatively uncontrollable. The cause of the disease is unknown, but because of the effectiveness of these drugs, it is believed that the disease is the result of an infection somewhere in the body, he said.

The treatment of those suffering from the affliction was begun with small doses of the drug to prevent toxic side effects. If no symptoms of intolerance appeared, the dosage was increased gradually to three or four tablets of 0.3 grams a day. Dosage of at least two tablets a day was found necessary for improvement.

The period of time the patients remained on Diasone ranged from three months to two and one-half years. The report pointed out that relief was received only so long as the drug was used.

Dr. Cornbleet stressed the fact that the drug should not be used unless the physician has the opportunity to keep the patient under observation in event of toxicity.

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X-ray Diagnosis by Telephone

Telognosis, the interpretation of facsimile x-rays transmitted by telephone, has proved very successful and offers unlimited promise in the field of medicine, it was reported in the *Journal of the A.M.A.*

Favorable results of the use of such a diagnostic aid for a year between Atlantic City and Philadelphia, a distance of 60 miles, were related by Drs. Jacob Gershon-Cohen, M. B. Hermel, H. S. Read and Bernard Caplan and Mr. A. G. Cooley. Drs. Gershon-Cohen and Hermel are associated with the Jewish Hospital, Philadelphia, and Drs. Read and Caplan with the Ventnor Clinic, Atlantic City. Mr. Cooley is of New York.

"The interpretation of the facsimile was compared with that of the original film, and the comparisons were extremely accurate," the doctors said. "As a matter of fact, no significant discrepancies occurred."

Telegnosis will be of great value, it was pointed out, in assuring a small hospital, with no skilled radiologist on its staff, of expert full time x-ray service, and may be a means of training young radiologists without loss of expert teaching and supervision.

In addition, the authors stated, other unexplored fields where this system might prove useful include small military outposts, ships at sea, and such parts of the world as Asia and Africa where there are few trained radiologists.

The apparatus consists of a transmitter that scans x-rays and a receiver which reproduces facsimiles. Consultations and

reports of the findings are made over the same circuit and may be recorded automatically on a dictograph. The signals are sent over commercial telephone channels.

Dr. Poncher to Leave Illinois Medical School

Dr. Henry G. Poncher, professor of pediatrics and head of the department at the University of Illinois College of Medicine, has resigned his University appointment effective Aug. 31, 1952, to enter private practice in the community in which he resides, Valparaiso, Ind.

Dr. Poncher will devote his time to a general family type of practice, excluding obstetrics and surgery. He also has accepted a part-time position as medical director of Valparaiso University, and as a visiting professor in human biology at the University in Valparaiso.

Dr. Poncher, 50, has been associated with the University of Illinois since 1928, and was the first full-time member of the faculty in the clinical branches. He was appointed instructor in pediatrics in the College of Medicine at that time, while serving his residency in the University's Research and Educational Hospitals.

He was elevated to the rank of associate in 1929, assistant professor in 1930, associate professor in 1935, professor in 1941, and as head of the Department of Pediatrics in 1944.

Dr. Poncher, highly regarded as a teacher, was the first member of the faculty to receive two Raymond B. Allen Instructorship Awards in the same year. The award is designed to honor excellency in individual instruction rendered

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by faculty members to students.

His contributions to pediatric education and child welfare have been recognized nationally and many of his plans have set a pattern for other institutions in the country.

New Process for Synthesis of "Compound F" Reported

An easier, more efficient method for synthesizing "Compound F", a hormone related to Cortisone, but which may prove of more therapeutic value, was reported recently to the New York Section of the American Chemical Society.

The paper was read by Miss Rose Antonucci, a research chemist at Lederle Laboratories, Pearl River, N. Y., representing the team which includes Mr. Robert Lenhard, Mr. Ruddy Littell, Dr. Seymour Bernstein, Dr. Milton Heller and Dr. J. H. Williams, Lederle's Director of Research.

The place of Compound F in the treatment of rheumatoid arthritis and similar diseases is still not known, although some scientists speculate that it may prove more effective than Cortisone.

Cortisone, which has been synthesized, was isolated from the adrenal cortex. For many years it was believed that it was the most important of a number of hormones which have been isolated from this source, but recent investigations indicate that Compound F, also known as Hydrocortisone, is more important.

The Lederle group tackled the problem of synthesizing Compound F from Cortisone, and devised a simple method that yields about 20 per cent. The significance of this result is to make more attractive this direct conversion route for the preparation of Compound F, and to enhance its availability for clinical testing. Work is now in progress for the improvement of this process.

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MEDICAL TIMES, MAY, 1952

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